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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN AND
RELATED MATTERS.

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Hearing held in Court Room 20
Court House
361 University Avenue
Toronto, Ontario

The Honourable Mr. Justice S.G.M. Grange	Commissioner
P.S.A. Lamek, Q.C.	Counsel
E.A. Cronk	Associate Counsel
Thomas Millar	Administrator

Transcript of evidence
for

July 21st, 1983

VOLUME 15

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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN
AND RELATED MATTERS.

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Hearing held in Court Room 20,
Court House, 361 University
Avenue, Toronto, Ontario, on
Thursday, the 21st day of July,
1983.

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10 THE HONOURABLE MR. JUSTICE S.G.M. GRANGE - Commissioner
11 THOMAS MILLAR - Administrator
12 MURRAY R. ELLIOT - Registrar

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14

APPEARANCES:

15

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23

E. MCINTYRE

24

Counsel for the Registered
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and 35 Registered Nurses at
The Hospital for Sick Children

25

(Cont'd)



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1	<u>APPEARANCES:</u> (Continued)	
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5	G.R. STRATHY)	Counsel for Phyllis Trayner -
6	P. RAE)	R.N.A.
7	B. JACKMAN	Counsel for Mrs. M. Christie - R.N.A.
8	S. LABOW	Counsel for Mr. & Mrs. Gosselin, Mr. & Mrs. Gionas, Mr. & Mrs. Inwood, Mr. & Mrs. Turner, Mr. & Mrs. Lutes and Mr. & Mrs. Murphy (parents of deceased children)
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2634

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25



/DP/ak

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2

---Upon commencing at 10:00 a.m.

3

THE COMMISSIONER: Yes, Mr. Lamek.

4

MR. LAMEK: Thank you, sir.

5

May we have Dr. Rowe back, please.

6

DR. RICHARD DESMOND ROWE, Resumed

7

DIRECT-EXAMINATION BY MR. LAMEK: (Continued)

8 Q. Dr. Rowe, there are three
9 more of the December deaths that we want to cover
10 today if we can, and the first of them that I want
11 to deal with this morning is that of Real Gosselin
12 who was a three week old child. He had been
13 referred to the Hospital for Sick Children from
14 Winnipeg. He was admitted on December 17, 1980 and
15 he died that night at 3:16 in the morning of
16 December 18, 1980. He came to the Hospital for
17 Sick Children with a diagnosis from the hospital in
18 Winnipeg of congestive heart failure and what they
19 thought to be an interrupted aortic arch. The
child had undergone a cardiac catheterization in
Winnipeg, had he not?

20

A. Yes, he had.

21

Q. Now, Doctor, we have on the
22 easel a diagram which purports to depict the
23 anatomy of Real Gosselin's heart. Can you tell us
24 whether it does so with reasonable accuracy?

25



1

2

A. There are some points I would like to make about it that may need to be corrected but the general features are consistent with that.

3

4

Q. Subject to anything that you think should be corrected, could you please describe the anatomy of that heart for us?

5

6

7

A. Yes. The prime problem in this heart was a left sided disorder which was at one end of the spectrum of hypoplastic left heart. The left ventricle is somewhat diminished. There is an abnormality of mitral valve and aortic valve that were not particularly severe, I believe, and the aortic arch was abnormal.

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Essentially it was a hypoplastic or under-developed aorta and there was a very severe coarctation in the usual site. The diagram was made, and I am afraid does not quite accurately reflect the severity of the obstruction in the aortic area right opposite the mouth of the ductus arteriosus.

In the studies in Winnipeg, in fact

they believed there was no passage of the contrast material that they injected into the ascending aorta to outline the aorta, they could not see anything going beyond this point here. They believed



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Rowe, dr.ex.
(Lamek)

2510

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that the aorta was completely obstructed at that point but in fact our assessment of it was that it was not interrupted but very severe coarctation. I'm afraid this diagram does not quite put that point through and if necessary and if it would be preferred we can make that adjustment as we have done with one other.

8

6

A. The ductus, however, was patent as
later was shown, but presumably this baby's condition
was precarious from birth because it is a ductal
dependent lesion. That is, once the ductus shuts
off then the obstruction would become extremely
severe and you may recall that in others if the
ductus is open there is a little bit of a bypass
around the mouth of the ductus for blood coming from
the ascending aorta to go to the descending aorta.
It can take a little dip into the mouth of the
ductus and then down here whereas once the ductus
arteriosus is shut the dimension of the aorta is
very markedly reduced. If you have a critically
severe obstruction as in this baby the ductus
is obviously of tremendous importance in the
functioning.

24

25



1
2 Nevertheless, in this situation the
3 likely course of events would be that blood would come
4 in in the usual way, be pumped out to the pulmonary
5 arteries, come back to the left side of the heart
6 and meet with minor resistance at these two valves,
7 a major problem being a relatively small left
8 ventricle, although not minute, and then a small
9 aorta here with obstruction up here, so there is
10 a situation induced in which this ventricle has to
11 pump against a high resistance and will fail fairly
12 quickly when that happens. If the obstruction is
13 very severe here, there is so little perfusion of
14 blood down to this part of the aorta and to other
15 important organs like the liver and kidneys and
16 bowel that the patient very quickly can deteriorate.

17 So it is the severe malformation
18 and unless something is done to try and alleviate
19 it death would inevitably occur. The consequences
20 of intervention surgically depend upon other
21 defects including the degree of smallness, as it
22 were, of this left pumping chamber but I think
23 one would consider this patient potentially
24 operable.

25 Q. Doctor, there were three
26 things on the chart, perhaps you would explain to me.



1
2 There is on the diagram in any event an atrial
3 septal defect which I do not think you mentioned. Is
4 that a part of the anatomy of the heart?

5 A. That is added there because
6 of the evidence I think in the catheterization study
7 of some shunting. I am not sure whether, I think
8 it was a foramen ovale defect in the autopsy so
9 at the trapdoor - in this situation the trapdoor
10 is often - at the atrial level, the trapdoor is
11 often stretched so that there is a defect created
12 so the trapdoor does not quite cover the bottom of
the normal aperture.

13 It is difficult to tell at cardiac
14 catheterization whether that is a true congenital
15 defect or whether it is a stretched opening.

16 Q. The second thing, Doctor,
17 the diagram appears to show some thickening of the
18 mitral aortic valves and you did refer to that. Is
19 there any particular significance to that? Is that
indeed what is being shown on the diagram?

20 A. Yes, indeed. The thickening
21 on the diagram for the aortic valve is meant to
22 draw attention to the fact that there are only two
23 leaflets to that valve which makes it very mildly
24 restrictive but not severely so. The other thickening



1

2

is just to draw attention to the fact that the
anterior leaflet of the mitral valve is abnormal.
We could not demonstrate it. It is just that
instead of it being attached by the strings that
I was talking about the other day to the papillary
muscles on each side here, it was directly attached
to the wall of the ventricle, so that it is an
abnormal valve and it might produce some influence
on the dynamics but nothing to the degree that one
would see from the severity of the coarctation itself.
The predominant lesion was the coarctation.

12

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Q. The third feature that
strikes me, at least, in the diagram, Doctor, is
that the ductus arteriosus appears to be a much
more substantial vessel here than is it shown to be
on other diagrams?

17

18

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A. Yes, I think that is part
of the problem of showing the severity of the
coarctation, I think that was done because it was
trying to illustrate the potential effect of
prostaglandins but I think that should be a smaller
size ductus and a much more severe narrowing opposite
the point in the aorta itself.

Q.

Thank you. Doctor, we have
a very short hospital record to deal with, reflecting



1

2

I suppose the brevity of the stay of the child.

3

4

THE COMMISSIONER: Do you want to make the diagram an exhibit?

5

MR. LAMEK: Oh, yes, forgive me.

6

THE COMMISSIONER: Exhibit 88.

7

----EXHIBIT NO. 88: Heart Diagram of Real Gosselin.

8

9

THE WITNESS: Mr. Lamek, may I ask if you want that diagram to be adjusted?

10

11

12

13

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MR. LAMEK: I think it would be helpful, Doctor, yes, thanks. Otherwise, looking at it some months from now, and perhaps not recalling what you said, we may get the wrong impression of it. Thank you.

15

16

17

18

19

Q. Now, Dr. Rowe, this child having undergone cardiac catheterization in Winnipeg where as you have said the diagnosis was interrupted aortic arch and the child having also been diagnosed as having congestive heart failure in Winnipeg, he was started on digoxin in Winnipeg, was he not?

20

A. Yes, he was.

21

Q. And indeed received digitalizing doses in Winnipeg?

22

A. He did.

23

Q. At page 16 of the chart

24

25



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Rowe, dr.ex.
(Lamek)

2515

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there is a reference --

3

4

A. May I have a copy of the
chart, Mr. Lamek?

5

Q. Of course.

6

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(Lamek)

2516

/DM/jc

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Q. I find the page numbers are not very clear on this chart, Mr. Commissioner, but maybe one comes across one and can work from there. Page 16 is a copy of a page from the progress notes at the St. Boniface General Hospital in Winnipeg, the referring hospital. It appears from the foot of that page that on the 15th and 16th of December, 1980:

"Digitalizing doses of digoxin".

Were administered to Baby Gosselin, does it not?

A. Yes.

Q. Do you have any comment, Doctor, on the size of those digitalizing doses?

A. Yes. They are on the high side. We would probably give a somewhat lower amount.

Q. Could you give us some idea of the ---

A. Well, that works out as I calculate it at about 55 micrograms of digoxin per kilogram of body weight for a total digitalizing dose, given intravenously.

Q. Yes.

A. And we would probably give about 40. It is within the range of many hospital



1

2

3 guidelines because there is a variation in the way
4 this is handled from hospital to hospital. We have
5 always traditionally had rather lower doses than
6 most other units so we would say a lower dose if
7 it came to us directly and other places might say
well, we prefer a bigger amount.

8

9

10 Q. But in fact the digoxin
11 level was taken in the blood of this child on the
12 day of admission, was it not?

13

A. Yes.

14

15 Q. And at page 55 the level that
16 is recorded is shown there. Again that is a very
17 unclear number, Mr. Commissioner, I am afraid.
18 Page 54 is not bad and if it is of any help it is
19 seven pages from the back of the binder and it is a
20 biochemistry report. From which it appears, does it
21 not, Doctor, that the level recorded in a sample of
22 this child's blood taken at 4:30 on December the
23 17th was 3.7 nanograms per millilitre?

24

A. Yes.

25

Q. And that in the order of
the number you told us a couple of days ago would
be seen reasonably as a warning flag in a child?

26

A. Yes.

27

Q. And that, Doctor, I take it

28

29



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2518

Rowe, dr.ex.
(Lamek)

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B3 explains, does it not, the order on page 53, two
3 pages further back, back towards the front of the
4 chart, where the digoxin level is ordered on the 17th,
5 Order No. 4 in the top order slip. That is page 53,
6 Doctor, two pages back towards the front. The
7 first order slip copied on that page shows Item 40
8 digoxin level and then turning over the page to
9 page 54.

A. Yes.

Q. The third order slip on that
10 page an order given at 7:25 in the evening of the
11 17th says: "Hold digoxin in the evening: tomorrow
12 morning start digoxin .018 milligrams; before -
13 don't start digoxin take dig again level in a.m."

14 So I take it there was a rather
15 conservative approach to the level that had been
16 recorded on the afternoon of this child's admission
17 and presumably somebody wanted to have that level
18 drop a little before continuing with the digoxin?

A. Yes.

Q. Is that a fair inference?

A. Yes, and they would be

(2) concerned that the nature of the malformation might
22 aggravate this situation because of the cor
23 profusion of the kidneys.

24

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E.4 (DM. jc)

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Q. And I won't ask you to find the page particularly, Doctor, with this poor numbering of the copies, but that order is reflected in the nursing notes, the progress notes at page 44 of the record for the 17th of December.

Now the child was admitted to Ward 4A, was he not, and in particular Room 418, and that appears ---

A. Yes, 4A.

Q. Admitted to Room 418?

A. Yes.

Q. As we said, he had undergone catheterization in Winnipeg where the diagnosis had been made. At the Hospital for Sick Children was that diagnosis of interrupted aortic heart either confirmed or accepted, or was there some measure of disagreement?

A. No. I think that was felt to be a reasonable diagnosis. I believe when the films were examined, and I am not sure at what point the films were examined, there was a conclusion that it wasn't a complete interruption, but it is a matter of degree and it was virtually talking about the same degree of functional problem.

Q. It seems as I read the chart



B. 5

1

2 to have been concluded, I suppose on a sort of
3 sliding scale that it is not a total interruption but
4 a severe coarctation?

5 A. Yes, exactly.

6 Q. And it was also decided that
7 there was a patent ductus arteriosus, was it not?

8 A. I think that couldn't be
9 decided clinically.

10 Q. Yes.

11 A. But must have been evident on
12 the picture.

13 Q. Was it not inferred that that
14 ductus was indeed the major supply, the major source
15 of supply of blood to the lower body?

16 A. Yes, depending on how patent
17 it is.

18 Q. And it was therefore important
19 until something could be done with this child I take
20 it to keep the ductus open?

21 A. Yes.

22 Q. And was it for that reason that
23 prostaglandin was started?

24 A. Yes, that would be the reason.

25 Q. I take it that you were anxious,
when I say you I mean your Division, was anxious to



B.6

1

2 resume the drug regimen that would help control the
3 congestive heart failure of the child and get back on
4 to the digoxin?

5 A. Yes.

6 Q. But unhappily that did not
7 appear to be prudent in light of the level that was
8 recorded on admission and we have seen what the orders
9 were in respect of that?

10 A. Yes.

11 Q. Now, on page 44 of the record,
12 Doctor, the second page of the progress notes, there
13 is a note at the top of that page 17.12.80, 1900
14 hours, 7 o'clock in the evening, and does that appear
15 to you, as it appears to me, to be the note of a
16 physician?

17 A. Yes.

18 Q. It records he was called to see,
19 presumably this patient, because of apnea?

20 A. Yes.

21 Q. Two episodes I believe?

22 A. Yes.

23 Q. And apnea is what, Doctor?

24 A. It is where the breathing stops.

25 Q. No breathing?

A. No breathing.



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Rowe, dr.ex.
(Lamek)

2522

B.7

1

2 Q. And the colour is, what is that,
3 is that "D"?

4 A. I can't read that.

5 Q. A rather cryptic signal, if it
6 is a "D" it may be short for dusky or something of
that sort?

7 A. Yes.

8 Q. He records bradycardia.

9 A. Yes.

10 Q. And appears to order that the
11 heart rate be monitored?

12 A. Yes.

13 Q. Monitor heart rate does that say?

14 A. Yes.

15 Q. It appears to me to say that
anyway.

16 A. Yes.

17

18

19

20

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21

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RCHSC
July 21



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(Lamek)

2523

EMLB.jc

C

1

2 Q. Now, at the bottom of the page,
3 at the top of the next I'm afraid is an utterly
4 illegible entry. But on the top of page 45, second
5 line, there is one word that sort of comes out of that
6 very faint copy and that is "vomited". Do you see that?

7 A. Yes.

8 Q. I don't know whether you are
9 better able to read that awful copy than I am, Doctor.
10 I confess that is the only word that comes very
11 clearly to me.

12 A. I think this is a comment - I
13 take it that paragraph starts with the word "Nutrition"
14 and this would be a nursing note about the feeding.

15 Q. Yes.

16 A. And something around "patient
17 became more drowsy, fed more poorly".

18 Q. Yes.

19 A. "Fed ...".

20 Q. Is that 60 cc's?

21 A. "... 60 cc's at ..." something
22 or other hours "vomited".

23 Q. I don't know whether that is
24 30 or 80 cc's.

25 A. Yes.

Q. It wouldn't be 80, would it,



C.2

1

2 it would only be taken in 60?

3 A. Yes. I'm not sure. Probably
4 30, yes.

5 Q. But at least it appears that
6 some time in the evening of the 17th, in addition to
7 the two episodes of apneic there had been an episode
of vomiting?

8 A. Yes.

9 Q. And the note at 2220 which
10 follows it, which again appears to be a note of a
11 physician I think:

12 "Lasix has been administered",
13 and it appears 102 cc's, and it appears, does it not,
14 that the lasix is doing its diuretic work?

15 A. Yes, looked to have been helpful.

16 Q. At the end of that note:

17 "Stable for present but require
18 relatively urgent operative inter-
vention."

19 A. Yes.

20 Q. Now, on the next page of the
21 progress report, Doctor, on the lower half of the page
22 first, we have Nurse Nelles' notes for the period
23 from 7 o'clock in the evening until 2 o'clock in the
24 morning of December 18th. Perhaps you could just take

25



C. 3

1

2 a moment to go over those. Nutrition, baby was taking
3 nothing by mouth in any event, by Dr. Stephen's
4 order, taking glucose intravenously, is that it?

5 A. With added potassium.

6 Q. Potassium, yes. And prostaglandin
7 was also being infused?

8 A. Yes.

9 Q. Very noticeable edema in the
10 feet and abdomen also. Somewhat distended, and I take
11 it again indicative of congestive heart failure?

12 A. Yes, that would be consistent
13 with that.

14 Q. Vital signs apex regular and
15 staying at 120 a minute?

16 A. Yes.

17 Q. Respirations appear shallow at
18 times and although apneic monitor did not alarm, babe
19 continued to have periods of irregular breathing.
20 Blood pressure lower in upper extremities, 124/130 in
right arm. Is that in right arm or room air?

21 A. Room air.

22 Q. Room air.

23 A. No, no, I'm sorry.

24 Q. It is right arm, isn't it?

25 A. Right arm, yes, it is.



C.4

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Q. You see the same abbreviation
for both things, don't you?

4

A. Yes, you do.

5

6

7

Q. As opposed to 170 over 148
earlier in the day, continues to be no blood pressure
in right leg, although - what's that?

A. Popliteal.

8

Q. Popliteal pulse?

9

A. Yes, popliteal pulse is audible.

10

Q. Is audible with a Doppler.

11

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Colour appears unchanged in or out of oxygen - I'm
not sure what that is - discontinue oxygen on
Dr. Stephen's suggestion and parents were in to visit
in the evening.

Now, that is the note of this child
until 2 o'clock in the morning. Can we then go back
to the previous page, please.

At the bottom of the previous page
there is a note at 3:30 a.m. Do you recognize the
handwriting on that note, Doctor?

A. Yes.

Q. Is that Dr. Rose's handwriting?

A. Vera Rose, yes.

Q. And she is a Staff Cardiologist
at the Hospital?



C.5

1

2 A. She is a Staff Cardiologist
3 in the Division.

4 Q. Yes. She records that at 3:30
5 in the morning - well, she records at 3:30 in the
6 morning that she was called about the child's cardiac
7 arrest at 2:50, arrived at 3:20. I take that Dr. Vera
8 Rose was not required to be in the Hospital at that
time of night?

9 A. No.

10 Q. But she was on call and was
11 summoned and obviously came?

12 A. That's right.

13 Q. And resuscitation had been
14 continued for 45 minutes of no avail. Baby had been
on IV - what does PGE mean, please?

15 A. Prostaglandins.

16 Q. Prostaglandins, thank you.

17 A. It is PG which is the
18 prostaglandins and E-1 is the particular variety of
19 prostaglandin.

20 Q. Thank you. Some apneic ...

21 A. Some apneic spells.

22 Q. Apneic spells, thank you, were
23 recorded earlier, no bradycardia. Prostaglandin was
continued because of risk of ductal closure?

24

25



C. 6

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A. Yes.

3

4

Q. Thank you. Digoxin had been held yesterday in the morning and in the evening because of level of 3.9, surgery was planned for today.

5

6

And then in the tiny writing in the bottom corner "explanation from ... "?

7

8

A. "Explanation given to the parents".

9

10

Q. Oh, to the parents, thank you.

Some consent for autopsy?

11

A. Consent for autopsy, yes.

12

13

Q. All right. I had a little trouble with that.

14

15

16

17

18

Now then, on the top of the next page is the arrest note written by Dr. Mount Stephen, there is an associate's note re a No. 25, a Code 25. He called at 2:30 in the morning, he arrived to find the baby was being bagged.

19

20

21

Can you tell us please, explain that for us. I am sure that is not nearly as sinister as it sounds?

22

23

24

A. No. It means that there is a mask with oxygen flowing and placed over the face and there is hand ventilation with the balloon attached to the mask.

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C.7

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Q. And external cardiac massage
is being done. Baby had no heartbeat, used sodium
bicarbonate, adrenalin and sodium, what's that,
gluconate?

A. Calcium gluconate.

Q. Calcium gluconate, sorry, yes,
it is calcium gluconate.

A. Isuprel.

Q. Isuprel also given, no electrical
response, four to five minutes into the arrest, no
electrical activity, pupils fixed and dilated, no
output and CPR was stopped and the baby was pronounced
dead at 3:16 in the morning.

The note is, from Rose, "See note
on other side of page", which I believe to be the one
we read at the bottom of the preceding page?

A. Yes.

Q. That surgery had been planned
for December the 18th.

Now, it hardly needs to be said,
Doctor, but we do once again have, do we not, an
apparently sudden onset of these terminal events and
a very rapid and irreversible course of them?

A. Yes.

Q. Arrhythmias that cannot be
resolved and the baby dies.



C.8

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2 Now, is the death and the time of
3 death and the manner of death of this child consistent
4 with his anatomy, his clinical condition, in your view?

5 A. Yes, very much so.

6 Q. Were the levels from the
7 digitalizing doses in Winnipeg sufficient in your
view to produce extreme toxic symptoms in this child?

8 A. No.

9 Q. I take it that the terminal
10 symptoms and their course and onset are again
11 consistent with digoxin intoxication, however?

12 A. Yes.

13 Q. Did any cardiologist or Cardiac
14 Fellow or any physician to your knowledge raise any
15 question about the cause of this death?

16 A. I think there were concerns
17 about the suddenness of the deterioration and that
18 was expressed by one or two people.

19 I am not personally concerned about
20 the explanation because this, in my view, was a very
21 severe coarctation.

22 The baby had, as I gathered, developed
23 worsening of the failure during the evening from
24 about 9 o'clock onwards and although there had been
25 an initial response by diuresis, that simply



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C.9

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2 demonstrates that we were skating on very thin ice
3 with this baby and I think that I would ascribe
4 progressive deterioration and failure to that.

5 The question that other people had
6 raised was that relating to prostaglandins.

7 Q. Yes.

8 A. Because there had been periods
9 of apneic and there was some discussion I think in
10 our conference about that point, whether or not this
11 baby's death might have been induced by the
prostaglandins.

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DP. jc

D

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2 Prostaglandins have an effect on the central nervous
3 system of producing apnea and it is a known
4 complication of the administration of the drug. When
5 it occurs, what is usually done is that the dose of
6 the drug is reduced. In this situation the judgment
7 was apparently made to continue at the same level of
8 the drug because of the concern that there was not
9 a good effect evident from the prostaglandin in
10 opening up the ductus. The evidence for that I think
11 was revealed in the nursing notes on page 57 - would
12 it be - a flow sheet called Flow Sheet 3.

Q. 57 should be almost at the
12 very end of the book - five pages from the back -
13 Flow Sheet 3. The date in the top corner 17-12-80?

A. That is the one.

Q. Thank you.

A. That is the flow sheet that
17 describes the initial effect of prostaglandins
18 infusion, and the effect is of course partially
19 studied by the response of the baby. If the baby
20 seems to get better then that means we are doing the
21 job, so that the quickest way is to just feel the
22 femoral pulses and if the femoral pulses come brisk
23 within an hour or two of the infusion, then you know
24 that you have relieved the obstruction to some degree.

25



D.2

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2 In this particular baby there is no
3 note here about the femoral pulses. There are
4 comments in the nurses' notes I think about the
5 blood pressure but the blood pressures are recorded
6 specifically for this purpose here. I think that was
7 a medical order. I think you see that the blood
8 pressure was 174 in the arm and 70 in the leg before
9 the infusion started, and an hour afterwards it was
10 166 and 60 respectively for those two positions.

11 Q. I am not sure I am following
12 these numbers, Doctor. The 174 and 70, the notation
13 in the right margin, is before prostaglandins --

14 A. Yes.

15 Q. Thank you.

16 A. And then one hour later, or
17 after the infusion is started, there is a blood pressure
18 in the arm of 166 and in the leg of 60. The result
19 that you would hope for would be that the blood
pressure in the arm would come down somewhat and the
blood pressure in the leg would go up.

20 Q. I see. They both came down.

21 A. The change there is not
22 significant. Then 2-1/2 hours later the blood
23 pressure is 158 in the arm and 64 in the leg and we
24 expect to see somewhat - or we would hope to see
25



D. J

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2 somewhat better result than that. The difficulty
3 here is that the baby is three weeks old and the
4 ductus arteriosus is not quite so amenable to
5 manipulation with prostaglandins as you progress with
6 age in the neonatal period.

7 I don't know what decision was in
8 the mind of the resident but one can guess that a
9 reasonable decision was that they are going to have
10 to persist with it although the results don't look
11 terribly good at the moment. When apnea came around
12 they must have discussed the question of dropping or
13 not the dose and probably decided that they should
14 continue. I do not have a good feel in the notes
15 for what those discussions may have been, of course, but
16 I think that would be the way that most of us would
17 have managed it.

18 Q. So the question that was raised,
19 if I understand you, was whether the prostaglandin
20 may have played some part?

21 A. Whether there might have been
22 a major effect of prostaglandins on the breathing
23 again or in some way affected the situation. There
24 was some subsequent correspondence about that.

25 Q. Where would I find that?

26 A. I think Dr. Freedom wrote to
27 Dr. Gordon Cumming of Winnipeg.

28



D.4

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2 Q. That is not part of this record.

3

4 A. I think this was a note that
he sent to accompany the discharge report. Our
5 custom is that when the discharge report is printed
at the Hospital, for the Hospital record, it is sent
6 to the HSC referring doctor, and he then writes a
7 covering letter to the doctor outside, with the
8 discharge report. It is a sort of a more personal
9 thing that he does, to add any other comments that he
10 might have.

11

12 Q. I have seen references in those
covering letters to an enclosed summary. I have
13 never been sure what the enclosed summary was. Now, I know

14

15 what the enclosed summary is, but we do not have the
reporting letter.

16

A. No.

17

18 Q. How was that question resolved
as to the possible involvement of the prostaglandins?

19

20 A. The discussions that we held
which included the contribution of Dr. Peter Olley, who
21 is the world prostaglandins expert in our midst
22 were that he did not think that the apnea was likely
23 to cause the death, from prostaglandins.

24

25

I believe that Dr. Cumming in Winnipeg



D.5

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2 had other thoughts about that. He felt that in his
3 experience a possibility of death in a baby of this
4 sort on prostaglandins might be that the ductus opens
5 up quite abruptly after a period of time and allows
6 a complete flooding of the lungs, just like Niagara
7 Falls entering the pulmonary circuit, in a sudden
8 fashion that would, in a baby who had a relatively
9 small left heart, might create acute distress and
death.

10

11

12

It is still a debatable issue, I
do not know that anyone can be sure. But at least
there was a lot of discussion about that point.

13

14

15

The other discussion we had of course
was over the question of the timing of surgery,
whether there was any possibility that an earlier
intervention surgically might have changed the picture.

16

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Q. Certainly you had not had much
opportunity for that. The child had only been
admitted what - the early afternoon of the 17th?

19

20

A. The child was admitted at
3 o'clock in the morning.

21

Q. Oh, the morning of the 17th -
sorry.

22

A. Of the 17th.

23

24

Q. And was there therefore for 24
hours?

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D.6

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A. Yes. So there were some questions that we addressed there and in fact that is the reason that this baby is put in the category I put the baby in for the January meeting. There was a question about whether something else might have been possible. Now, we do not know whether it would or not, but that was the question that was asked.

Q. Something you said a little earlier interested me, Doctor. I believe you said that the baby's condition, and I think you referred specifically to the heart failure, in your view got worse from about 9 o'clock on.

Can I ask you please, from what you draw that conclusion?

A. I drew that conclusion from the resident's note. It was not my conclusion because I did not see the baby.

Q. The resident's note at --

A. On the 17th at 1900 hours.

Q. At 7 o'clock. Yes.

A. That was when there had been periods of apnea and bradycardia and the liver, he makes a note that the liver size has gone up to 5 to 6 centimetres and I think there was - I am not sure what other thing there, but the edema had not changed



D.7

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2 but the liver size had increased. I think that that
3 is the reason why he ordered lasix immediately so
4 that I think his conclusion would have to be that
5 the baby's failure was worse, and I would agree with
6 that, at that time.

7 Q. At that time. That was at
8 7 o'clock?

9 A. Yes.

10 Q. Do you attach any significance
11 to what is reported by Nurse Nelles in her note
12 covering the period from 7 o'clock until 2 a.m.? As
13 you say, they do not appear to have been observed by
14 her any heartbeat irregularities.

15 A. No.

16 Q. And there was some irregular
17 breathing in periods, she said.

18 A. Yes. Well, she would not be
19 palpating the size of the liver, that is not a nursing
20 function. I think I have referred to that before as
21 being one of the more subtle things that happens under
22 your eyes.

23 Q. At 10 o'clock the same resident,
24 as we have noticed already on page 45, at 10:20 has
25 recorded 102 cc's voided which we agree seemed to be
indicative of the lasix doing its work but the liver



D.8

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2 is now less distended, 2 to 3 centimetres below
3 costal margin and his note at 10:20 is that the baby
4 appears for the present to be stable.

5 A. Yes.

6 Q. And so the condition at 7 o'clock
7 does not appear to have been the condition three
8 hours later?

9 A. No, because of the diuretic.

10 Q. Because of the diuretic some
11 improvement has been achieved?

12 A. Yes.

13 Q. Then between 10:20 and 2:50,
14 in the space of an hour and a half, is it your opinion
15 or suggestion that this baby's condition worsened
16 again so dramatically that at 2:50 in the morning the
17 child arrested?

18 A. I think that is perfectly
19 possible. I have no evidence of that, but the baby
20 was very sick with a very severe malformation and I
21 think that could happen perfectly easily.

22 Q. You will agree with me, Doctor,
23 one cannot read the observations of the resident in
24 the 7 o'clock note without taking into account the
25 observations in the 10:20 note also?

26 A. No.



D.9

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2 Q. We come now, Doctor, to the
3 second last of the on-ward deaths in 1980, that of
4 Stephanie Lombardo, who died at 4:20 in the morning
5 of December 23, 1980.

6

A. Yes.

7

8 Q. We now have on the easel a
9 diagram that I understand shows the anatomy of the
child's heart. Can you confirm to me that it does
indeed do that?

10

A. Yes, that one does reflect --

11

12 MR. LAMEK: Good. May that be the
next exhibit, please, Mr. Commissioner?

13

THE COMMISSIONER: Exhibit 89.

14

--- EXHIBIT NO. 89: Heart Diagram of
Stephanie Lombardo.

15

16 MR. LAMEK: Q. Would you describe,
please, Doctor, the anatomy of that heart and its
17 anomalies, some of which I confess are apparent even
to me.

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E/DM/ak

A. This girl had a condition

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which is tetralogy of Fallot. You will recall from
4 the others that the principle components of that
5 malformation of the heart are there is a large
6 ventricle septal defect between the two pumping
7 chambers. There is a variable degree of obstruction
8 to blood going out to the lung or pulmonary stenosis.
9 That can range from very mild to complete occlusion
10 of the vessel going out to the lung, so called
11 pulmonary atresia.

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In this case there was severe
obstruction but it was, the aperture was patent,
there was no complete obstruction. There was severe
infundibular stenosis, and most importantly there
was an extremely small main pulmonary artery and
pulmonary branches. I think the diagram is
especially drawn to try and reflect that, it is a
bit difficult to do. There is normally some
discrepancy in tetralogy of Fallot between the
size of the aorta and the pulmonary artery. What
decides the size of the pulmonary artery is the
amount of blood that is going through there during
its development. If very little blood can get out
there, then this vessel tends to be very small.
If a fair amount of blood is going out to the lung



E2

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then you get a slight reduction in the size of the
vessel but not very much.

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So here there was a marked reduction
in size of -the whole of the length of the pulmonary
artery and its branches. We can perhaps come to that
in terms of what was done surgically, but I have
placed in here a small dotted circle which
represents the operative intervention, and we may
come back to that if you wish.

Q. Perhaps you could describe
it now, Doctor, that would be fine.

A. The operation that was
recommended here was something that would increase
the amount of blood going to the lungs. So that
this obstruction was bypassed, that is blood coming
into the heart here, since very little goes out that
way, and most of it went out this way, had to somehow
or other be put back inside the pulmonary artery in
order for the degree of oxygen in the blood to rise.

The usual procedure for this is a
Blalock-Taussig operation, which I have referred to
before, which employs the subclavian artery on one
or other side and brings it down, after transection,
so that it is anastomosed to the common artery.
It is usually done to a pulmonary artery branch.



E3

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There are other forms of that operation

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that modify, Blalock-Taussig operations in which a
4 piece of material which is properly known as gortex,
5 g-o-r-t-e-x, is inserted between either the subclavian
6 artery and the pulmonary artery, or somewhere else
7 in the pulmonary artery, somewhere else from the
8 aorta to the pulmonary artery in order to increase
9 the size and the amount of blood going through to
the lungs.

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In this baby that was the original
intention at operation I understand. But because
the diameter of this vessel was too small it was
not possible to place a gortex shunt. Furthermore,
it was not possible to anastomosed the subclavian
artery because this vessel was even smaller here
than it is down here and it was not possible to do
that and produce an effective shunt, which created
a bit of a surgical dilemma. In the end the surgeon
decided to open the back end of the pulmonary artery
and try and make an incision in the front end of
the aorta and join those two vessels together locally.
This is a procedure that they don't particularly
like to do if they can avoid it, because it is at
high risk of the anastomosed being ineffective, but
that was all that could be done. So that was the



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E4 operation that was eventually conducted and that is
what that little circle is meant to represent.

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Q. Thank you. Now, Dr. Rowe, once again trying to get a capsule overview of this baby's course in the hospital and therefore referring primarily to the Discharge Report at page 18 of the Hospital record. It appears that the child was born on December the 13th at Northwestern General Hospital and was admitted that day to the Hospital for Sick Children.

A. Yes.

Q. She had been observed to be cyanosed and it was suspected that she might have some congenital heart defect. She was admitted was she not to Ward 7G?

A. Yes.

Q. Is that the Neonatal ICU?

A. That is the Neonatal ICU.

Q. Two days later a cardiac catheterization was performed upon her. That is to say on December the 15th and she was found to have a defect, the defect you have described, the tetralogy of Fallot and severe pulmonary stenosis. You have told us about those problems.

She was a candidate for surgery and



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two days after the catheterization, that is to say
on December the 17th, she had an operation to
provide the shunt, not to provide it but which
did provide the shunt that you have described.

3

A. Yes.

4

Q. And is it fair that she
tolerated the surgery reasonably well?

5

A. Yes.

6

Q. She went from the operating
room to the ICU and she remained there for five days,
and overall is it fair to characterize her stay
there as essentially uneventful?

7

A. I think that may not be
quite true.

8

Q. All right.

9

A. There was a problem with the
colour of the patient and the oxygenation of the
blood there and they were worried about the murmur.

10

Q. And the adequacy of the shunt.

11

A. And the adequacy of the shunt,
yes. But that was the main concern, the baby's
general condition wasn't bad.

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Q. We can come back and look at
those particulars, Doctor, and we will.

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A. Yes.

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E6 Q. On December the 22nd she

was transferred to the cardiology ward and there
she appeared to continue to make a good recovery
from the surgery. Again subject to the concerns
of the kind you have mentioned. She was still
slightly cyanotic, did she not appear otherwise to
be doing reasonably well?

A. Yes.

Q. She had been treated with
Heparin, that is an anticoagulant, is it not?

A. Yes, it is.

Q. And designed to guard against
blockage of the shunt?

A. Yes.

Q. That is the purpose of the
administration of that?

A. Yes.

Q. But she was receiving no
other medications, was she?

A. No, no other medications.

Q. And in particular she had
never been on digoxin, had she?

A. Never been on digoxin.

Q. Now let's go - she was
transferred to Ward 4A on December the 22nd,



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something like 11:15 in the morning, and a little
over 12 hours later, 3:45 in the morning of December
the 23rd she suffered, did she not, a cardiac arrest
and could not be resuscitated and she died?

6

A. Yes.

7

Q. And permission for autopsy
of this child was not given, was it?

8

A. No, it was not given.

9

Q. Subject to the qualifications
that we want to discuss, Doctor, is that a fair
overall summary of the major events over the course
of this baby in the Hospital?

10

A. Yes.

11

Q. Perhaps we can go to the
matters that you addressed and indeed to any others
that you think are significant and should be
considered in trying to arrive at an understanding
of how this child died just when she did?

12

A. Yes.

13

Q. And understanding the manner
of her death.

14

A. Yes.

15

Q. Could you take us to those
parts of the chart, Doctor, that are important in
your view for that purpose?

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A. It is not very legible on
page 37, there is a note at the bottom signed by
Dr. Burns.

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Q. Yes.

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A. The PO₂ is ranging in a reasonable area, that is the oxygen, but there is only a systolic murmur. The noise, as I have said in the past that is produced by for doctors to hear osculation are not produced for that reason obviously, what occurs after an operation, is that of a continuous murmur, a machinery type murmur, and we listen very careful for that at the beginning, especially when there is a concern about the adequacy of the shunt. So there were some discordances about, that the oxygen tension was reasonable but the murmur was not continuous.

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Q. Dr. Jedeikin makes the

same observation on the 19th of December, does he not on the next page?

A. Yes.

Q. Page 38.

A. Yes.

Q. Murmur only systolic.

A. Yes. The oxygen tension would have been influenced by the fact that the baby was



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E9 in a concentration of oxygen that was 40 per cent

surrounding its head, and therefore, although the

baby seemed to be getting ready where Dr. Jedeikin

and others would have been suggesting the baby

could go up to the ward, there was some concern

being expressed at that stage about the size of the

shunt.

9

10 Q. Yes. Doctor, can I ask you
one thing about that note of Dr. Jedeikin's on the
11 19th. Do you have any comment on the observation
two-thirds of the way through that note:

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"Child's colour and PO₂ increased,
improved, so one must assume
reasonable shunt function."

A. I think that that doesn't
necessarily follow in the high oxygen concentration,
it is better than it was before operation, obviously.

Q. Yes.

A. But it would still be a
concern that if you didn't have the good murmur
that you are running the risk that you are sitting
on something that might get worse quite abruptly.
I think that was the concern expressed on the next
page basically by Dr. Burns. I think this point
was discussed subsequently in more detail but it



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E10 3 says there in Item No. 4 that the matter was
4 discussed with Dr. Izukawa and Trusler over the
5 need for repeat shunt after the oxygen was measured
6 in room air. So Dr. Burns, a pediatric cardiologist
7 and an intensivist in training was obviously not
8 entirely happy about the status there and worried
9 that although the situation hadn't deteriorated in
any way that that might be the possibility.

10

Q. Yes.

11

A. She was always concerned about

12

the hemoglobin in this baby. The hemoglobin was only
I think 11 grams or something like that and she
felt that in somebody who is marginal then the
hemoglobin should perhaps be brought up to a higher
level. Those are the only comments on looking at
that date.

16

Q. The note on page 39 by Dr. Burns,

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Dr. Rowe, lists those five items as "needs" which I

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take it those are things that she proposed to do.

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A. I don't know whether she

had proposed to do them herself or whether she was just writing down what she thought should be done.

Q. Do you know whether there was any discussion with Drs. Izukawa and Trusler about the need for repeating the shunt?

A. Yes, yes I know there was.

Q. And what was the outcome of that discussion?

A. I think, from what I can gather, Dr. Trusler emphasized that the pulmonary arteries were so small that he was very concerned that any attempt to try and put anything further, do anything further to the pulmonary artery would not be successful and he felt that the best hope - I gather that he felt the best hope for this baby was to continue with this marginal shunt and keep the heparin going to make every possibility for it to continue and hopefully that over time, as the baby grew, it might get bigger.

But I think everyone was quite concerned about the potential of that shunt.

Q. Is there anything else in the chart, Doctor, that you think we should have firmly in mind when considering this child's death?



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A. Well, apropos of the use of heparin, there are comments somewhere in here about the tests which are used to determine the effectiveness of heparin, showed values all over the place. I think there are comments somewhere, I can't recall where I saw it.

Q. Yes, certainly in here.

A. The use of this drug in children and in babies is very difficult. To get a stabilization with heparin, heparinization is quite difficult and we often have that problem, but sometimes it is more obvious, I mean, it is more striking in some babies than in others. But there seems to have been a comment that is made there and I think that would cause me a little concern too, that that was not helping matters, if you like.

Q. Yes.

A. That's all I have to say about that.

Q. You have told us, Doctor, that it is your recollection that indeed there was a discussion with Dr. Trusler that was suggested by Dr. Burns and, as I understood it, essentially Dr. Trusler was saying there was not much more that could be done, given the size of the pulmonary artery.



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F3 Is that essentially what his views are?

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A. That was what I gathered from what was reported to me.

5

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Q. Nevertheless, Dr. Jedeikin had said on the previous page, on the 19th:

7

"This child is a candidate for transfer to the ward."

8

Was that a matter of any discussion, whether the child should be removed from the ICU and sent back to the ward?

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A. I think the discussion only concerned whether or not the shunt should be done now. If that couldn't be done, I think everybody accepted that there was no particular reason to keep the baby in the ICU.

Q. Because otherwise she seemed to be doing reasonably well?

A. Yes, seemed to be stable.

Q. Indeed, on the 22nd, she did go to the ward, did she not? That is on page 40 of the progress notes.

A. Yes.

Q. "Received the patient in the ICU at 11:15."

A. Yes.



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Q. Respiration is shallow and irregular, apex is regular, there is recorded air entry throughout but noisy upper lobes, taking formula well, avoiding adequate amount.

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I take it that heart failure was not a concern, or not a particular concern with this child, was it?

9

A. No, I don't think that would have been at all possible - or at all likely.

10

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Q. And records that parents were both in today, held the baby, fed the baby, concerned, had lots of questions, generally pleased with progress. That is the 22nd.

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A. Yes, I believe that's true.

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Q. Around the middle of the day the baby comes back to the ward.

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On the 23rd at 4:25 in the morning,

the next page, there is a medical resident noted the arrest. Perhaps we should first look at the nursing note at the foot of that page covering the period from 7:00 p.m. on the 22nd to 3:30 in the morning of the 23rd.

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24

The nursing note, I can only tell you, Doctor, that by recourse to the original I have been able to decipher some of this and I can perhaps help you.

25



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Rowe, dr.ex.
(Lamek)

2555

A. Right.

Q. It says:

"Patient relatively stable, heparin infusion well, patient feeding eagerly, 1½ to 2 ounces every three hours, apex 144 to 152 and regular, respirations 50 to 52 shallow but in no distress, colour pink in room air, dusky when upset, became restless after second feed, however, settled well."

Am I right, Doctor, that does not sound like a very turbulent evening?

A. No.

Q. Baby seems to be in reasonably good shape?

A. Yes.

Q. The note at the very bottom of the page is 0330, half past 3:00 in the morning:
"Baby became restless, breathing very shallow, apex irregular and bradycardic placed on cardiac monitor."
And then over the page:
"Colour became more dusky, 100 per cent oxygen given by mask, cold cyanotic



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"extremities, vomited small amount of
mucus, suctioned, Dr. Brand called and
a Code 25 called."

5

A. Yes.

6

7

Q. So, something occurred around
3:30 to change the pattern that had apparently
prevailed through the evening?

8

A. Yes, indeed.

9

Q. And the arrest note on page 41:
10 "Called at 3:30 re irregular apex with
11 bradycardia and observed baby was
12 cyanosed, cool extremities, weak
13 pulses, heart rate irregular on the
14 monitor, 80 to 180 with variable QRS
15 patterns. HS faint."

16

A. Heart sounds.

17

Q. Heart sounds, thank you.

18

"No murmur. Called Fellow in
Cardiology and cardiovascular surgeon.
19 Tried to have arterial gases and gave
20 oxygen by mask.

21

3:40 vomited, suction; 3:45 arrest,
fibrillation, massage started."

22

And then he goes on to list the steps that he took:

23

"Arterial blood gases at 4 o'clock in

24

25



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"the morning. Somebody at some stage
has put a square around the potassium
of 7.4, not hemolized."

5

What is the significance of that,

6

Doctor?

7

A. It is a relatively high level.

8

Q. And then he summarizes the
cause: intubated. Is that cardioversion? Is that
shock, attempting to defibrillate?

10

11

A. Yes, from fibrillation went
into asystole.

12

13

Q. Yes. Failure to initiate
heart rate, resuscitation stopped at 4:20.

14

A. Yes.

15

16

Q. Doctor, it is reminiscent of
the pattern that we have seen in a lot of other
cases, is it not?

17

A. Yes.

18

19

20

21

22

Q. An apparently stable child
throughout, in the course of five or six hours in
the evening that suddenly there seems to fall off
the edge of the world, something happens and the
child goes into an immediate and rapid and dramatic
decline and cannot be resuscitated.

23

24

A. Right.

25



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Q. It is characterized by the arrhythmias, in this case we've got some vomiting. It is the pattern that we have seen over and over again, is it not?

3

A. Yes.

4

Q. Was it your view when you considered this chart, Doctor, that the time of this child's death, the manner of onset of the terminal events and the cause of the terminal events were consistent with her anatomical and clinical condition?

5

A. Yes.

6

Q. I take it that you will agree that the symptoms exhibited, and the manner of their being exhibited, are also consistent with digoxin intoxication?

7

A. Yes.

8

Q. But this is a baby that never had digoxin?

9

A. No, the baby had never had digoxin.

10

Q. Well, let's be precise, digoxin had never been prescribed for this baby.

11

A. Yes.

12

Q. Were any questions raised by any of the cardiology staff or Cardiac Fellows in

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the Hospital as to the reason for this sudden
decline and death of this child?

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A. I think there were questions
but the discussion really centred around the
precarious nature of the shunt and the probable
explanation was thought to be that the shunt
occluded because no murmur was heard in the period
before the arrest and the knowledge of the anatomical
and surgical detail, the possibility that hepariniza-
tion wasn't effective led to the conclusion, which
I believe was shared by everybody, that the shunt
had probably clotted off.

13

14

15

Q. Now, unhappily, because there
was no consent given to autopsy, that could not be
verified?

16

A. No, it was clinical interpre-
tation.

17

18

19

20

21

22

Q. So, I take it in the first
instance, Doctor, that notwithstanding what was
seen at the time of surgery, the Lombardo child's
defects were of a kind and level of severity that
could perhaps be assisted by the surgical inter-
vention?

23

24

25

A. I think though this is a much
more questionable case than any other because of the



1

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size of pulmonary arteries. I think when it was discovered that an adequate usual type of shunt couldn't be performed, I think that would change the prognosis measurably.

6

7

Now, the size of the pulmonary artery of course had been evident from the moment the child's chest was opened for surgery?

8

A. Yes.

9

10

Q. And the difficulties, the prospects therefore must have been apparent from that time?

12

13

A. Yes. It is difficult to make the final statement on that until the surgeon actually goes to make the connection.

15

16

Q. Yes, but he must have observed the size of the pulmonary artery?

17

A. Yes, he would note they were small.

18

19

Q. And recognize the difficulties. Indeed, as I understand, you had to change his surgical plan?

21

A. he got in there.

Yes. But that was only after

22

23

Q. After the child was opened, yes.

24

A. Yes.

25



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Q. But the potential problem
with the shunt into a vessel of that small size
must have been known from the time of surgery?

5

A. Yes.

6

7

Q. In the immediate post-operative
period, therefore, was it considered that Stephanie
Lombardo was at risk of imminent death?

8

9

A. In the immediate post-operative
period?

10

11

12

Q. Yes, her condition is now
known, the difficulties inherent in that shunt are
now known because of the size of the pulmonary artery?

13

A. Yes.

14

Q. She had been put on heparin?

15

A. Yes.

16

Q. But is it contemplated at
that time that she is at risk of imminent death
because of the sheer anatomy of the situation?

17

18

19

20

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A. Well, I can't say that was
voiced other than to judge from the notes that are
made in the Intensive Care Unit and the conversations
that were held with Dr. Trusler that people must
have been concerned. They may not have written
down "I think this baby is going to die unless
another shunt is done", but they obviously were



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thinking along those lines because of the note.

3

4

Q. Apparently somewhere in any event.

5

6

A.. Oh, I think at least two cardiologists felt that way.

7

8

Q. Did Dr. Jedeikin feel that way?

9

A. No, but two staff cardiologists, two senior cardiologists did.

10

Q. That would be Dr. Izukawa?

11

12

13

A. Dr. Izukawa was one and

Dr. Burns is the other. She is a fully trained cardiologist.

14

15

16

Q. I see. As far as the observable progress of the child was concerned, it seemed in the immediate post-operative period that an improvement had been achieved?

17

A. Yes.

18

19

Q. The question was how long could it be sustained?

20

A. Yes.

21

Q. Would the shunt occlude?

22

23

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25



DR. jc
G 1

2 Q. Or would it be sufficient to
3 convey enough blood through the lungs?

4 A. That was our hope, yes.

5 Q. And she continued to have a
6 measure of cyanosis that is recorded throughout the
7 notes, nail beds, cyanotic, and when she cries
8 she gets dusky, that sort of thing. We also see
9 some continuing level of inadequate oxygenation of
the blood?

10 A. Yes.

11 Q. But at what stage, Doctor, was
12 it considered that Stephanie Lombardo's prospects for
13 survival beyond the next half hour were non-existent?

14 A. I don't think anybody would
15 say they were non-existent. They could not make that
16 judgment other than to say that the shunt was a small
one and there was a risk for that reason alone.

17 Q. But if the shunt did not do the
18 job then I take it this child was going to die?

19 A. Yes.

20 Q. And the shunt could fail to do
21 the job in one or two ways. Either it would prove
22 to be inadequate and you would expect therefore a
23 decline of the child, maybe a fairly rapid decline but
a decline which might take place over a greater or

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G.2

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2 lesser period of time and she would die, or the shunt
3 would occlude, and in that case I take it that
4 death would be pretty sudden, would it not?

5 A. Yes.

6 Q. And although this child was
7 being heparinized, you said, a rather difficult
8 procedure to attain satisfactorily, and the purpose of
9 it is to reduce the risk of occlusion of that shunt,
is it not?

10 A. Yes.

11 Q. You do not know whether that
12 is going to work, and if it does not do the work,
13 then this child could die at any moment. Is that fair?

14 A. Yes.

15 Q. That is why I say that
16 essentially one cannot say to anyone, Stephanie Lombardo
17 can be counted on to live beyond tomorrow. Was that
18 not really the situation? You could have no
confidence that this child would live beyond tomorrow
19 on the basis of what you have told me?

20 A. I don't know that we would
take as pessimistic a view of that as you have. I
21 think that our approach would be that there are risks
22 in this, we can try very hard with the measures we
23 know we can use and it is possible that the baby can

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G.3

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2 survive with that arrangement. But it is also
3 possible it may not. Experience tells us that we
4 have had problems of this nature where shunts have
5 been borderline before and some do well and some do
6 poorly. I don't know the comments in detail that
7 were made between these people and I think if you
8 want those, about what they specifically thought,
9 you would have to speak to Dr. Trusler and perhaps
Dr. Izukawa.

10 Q. Do you know whether the child's
11 parents were told what the prospects for their
12 daughter were?

13 A. I don't know.

14 Q. I would take it, Doctor, that
15 if there is a perceived and reasonable risk that a
child will not survive, that it is normal or usual
16 to prepare the parents for that situation?

17 A. Yes, that would be the case
18 but it would depend on a number of things.

19 Q. Upon what, in this case?

20 A. Well, the surgeon would have
spoken to them after the operation and I don't think
21 that a surgeon is going to say to anybody that the
22 prospect of your child dying suddenly within the next
23 half hour is the case when he cannot really make that

24

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G. 4

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2 prediction accurately. He is going to be more
3 optimistic than that. I do not know what he said to
4 this family, but I think in the general way that
5 physicians talk to the parents, they are not going
6 to hit them over the head with a hammer right after
7 they have gone through a traumatic experience with
an operation.

8

Q. Of course not, Dr. Rowe. We
9 are now talking about almost a week after surgery
10 and you would know far better than I that there are
11 ways of advising parents of the chance or the
12 probability or the likelihood that that child is
13 going to make it. You do not hit people over the
14 head with those things, I agree.

15

A. No.

16

Q. Do you know if anything was
17 said to these parents?

18

A. I don't know.

19

Q. To warn them of the possibility
that that child might suddenly die?

20

A. I don't know. You would have
21 to ask the surgeon and the physician. It was a
22 patient of Dr. Trusler's and he would have been the
one who would have presumably talked to them.

23

Q. When you say that you don't think

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G.5

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2 that you and your staff people were as pessimistic
3 in your view of this child's prospects as the way
4 in which I categorized them, may I take it from that
5 that at the time Stephanie Lombardo died her death
6 was sudden and unexpected?

7

A. Yes, you could say that.

8

Q. I don't mean just unexpected
9 in the sense that you defined it in January 1981,
Doctor?

10

A. Oh, I see. I would not be all
11 that surprised at this event happening because of
12 the precarious nature of the shunt, but it is a
13 sudden death, all right.

14

Q. It is certainly a sudden death
15 and one that you would have at least hoped would not
occur at the time and in the manner that it did?

16

A. Yes.

17

Q. Was anyone else on your staff,
18 to your knowledge, surprised that Stephanie Lombardo
19 died as she did in the early hours of December 23rd?

20

A. I cannot recall. I think
21 people were concerned about the issue of the shunt
size and whether there were other things we might
22 have done, that sort of thing, but I do not believe
23 that there was a lot of - everybody recognized the
24 precarious nature of that type of shunt.

25



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2 Q I take it that it is your
3 opinion, I want to be clear, that Baby Lombardo died
4 probably because of a sudden occlusion of the shunt?

5 A That would be my interpretation
6 of that data.

7 Q And is it your understanding
8 from such discussions as you may have had with other
9 staff cardiologists and indeed cardiovascular surgeons
10 at the Hospital that they share that view as to the
cause of this child's death?

11 A Yes, I believe so.

12 Q Now, Doctor, notwithstanding
13 that you have told me that the terminal events in
14 the case of Stephanie Lombardo were consistent with
15 digoxin intoxication, I take it that that was not an
16 explanation for this child's death that occurred to
you at the time?

17 A No, it did not, at all.

18 Q Was that because this was a
19 child for whom this drug had not been prescribed?

20 A Yes.

21 Q That is an interesting answer,
22 Doctor. If you pause to think whether digoxin had been
23 prescribed for her does that not suggest that you
considered the possibility of intoxication?

24

25



G.7

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2 A. No.

3

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Q. If you did not - if the thought never crossed your mind, why were you so firm in saying no, it did not, because she was not on the drug?

7

A. I did not think of that at the time. That was subsequently.

8

9

Q. The thought has occurred to you since?

10

A. Since that time, right.

11

12

13

Q. And part of what we are going to be doing next week is asking whether at a later date you went back and reconsidered some of these deaths.

14

A. Yes.

15

16

17

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Q. Perhaps we might think about this one now then though, because you seem to have a pretty clear recollection of your response when the thought did come to your mind at a later date. When did it come into your mind at a later date that these terminal events were indeed consistent with digoxin intoxication?

21

A. I think after the events of March.

22

23

Q. Was it as part of an overall

24

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G.8

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2 review of the ward deaths that you were considering
3 this one?

4 A. Yes.

5 Q. At that time, did you recognize
6 that the terminal events shown in the chart of this
7 child could be considered to be consistent with
digoxin intoxication?

8 A. Yes.

9 Q. And from what you have said I
10 rather take it you dismissed that as an explanation for
11 the child's death?

12 A. Yes.

13 Q. Why?

14 A. Because I thought that the other
explanation was much more likely. No murmur was
15 heard, the baby had a small shunt, the anatomy was
16 appropriate; but I cannot exclude the other possibility.

17 Q. I think the proper thing,
18 Doctor, to do, is to wait until we can look at the
whole series and ask that kind of question because
it is obviously part of an overall review and it may
not be appropriate to take them individually out of
that context. So let us come back to that next week.

22 Mr. Commissioner, it is 11:25. I
23 assure you I will keep my promise to be finished before
24

25



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G. 9

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2 lunch time. May we take a short break?

3 THE COMMISSIONER: Yes. We will take

4 fifteen minutes.

5 ---- Short recess.

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H/DM/ak ---Upon resuming at 11:45 a.m.

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THE COMMISSIONER: Yes, Mr. Lamek.

4

MR. LAMEK: Thank you,

5

Mr. Commissioner.

6

7

Q. Dr. Rowe, may we then go to
the last of the on-ward deaths in 1980, that of
Jesse Belanger?

8

9

Mr. Commissioner, I should say right
now that this is a male child.

10

11

THE COMMISSIONER: Yes, all right.

Thank you.

12

13

MR. LAMEK: The middle name was
David I understand.

14

15

16

Q. Baby Belanger was admitted
to the Hospital on November the 19th and he died,
did he not, in the evening of December the 28th,
1980, some six days after surgery?

17

A. Yes.

18

19

20

21

Q. Now, Doctor, we have on the
easel a diagram that I understand depicts the
anatomy of this child's heart. Will you confirm
first that it does so depict.

22

A. Yes, it does.

23

MR. LAMEK: May that be the next
exhibit, Mr. Commissioner.

24

25



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---EXHIBIT NO. 90: Heart Diagram of Jesse Belanger.

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MR. LAMEK: Q. Dr. Rowe, this one explanation, can you describe it for

A. Well, I will try, it is a
fect. Is this thing on?

THE COMMISSIONER: No, I can hear

MR. LAMEK: I think it is.

THE COMMISSIONER: I might say we try the first day at the new quarters contraptions and see if we can hear ter.

THE WITNESS: The defect is a
pulmonary stenosis. Internally the
completely a single chambered
is no atrial wall at all at the top
there is no true ventricular septum in
so that there is really what is known
atrium and a single ventricle. So I
said, it is a two chambered heart.
single chamber. One pumping chamber
ing chamber, so there is complete
top level.

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The valve between the two chambers is a common valve, one single valve instead of two, it is a single atrial ventricular valve.

Now, although it is called a single

ventricle, there is a pocket or outlet portion which is in the recesses, it is a hard thing to demonstrate on a simple diagram like this, but there is a corner of this single ventricle which contains a rudimentary chamber and from that chamber arises a very small pulmonary artery.

The aorta arises from the single

ventricle in an unobstructive way and since most of the blood that leaves this pumping chamber is going, it cannot get out through the artery to the lung, the aorta is the larger of the two vessels, it branches in such a way, and points in such a way that it goes down on the right side, so there is a right sided aorta gouge. I think I have said before that that is not of great functional importance to anybody but in this particular instance it is one of the difficulties.

The subclavian artery to the left arm

arises from the aorta when it is in the right side of the chest, and so winds a way over to the left arm in that way, and that had importance in the



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management, the surgical management of this patient.

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So the blood coming into the heart enters in the usual way and when it gets to the right atrium it enters really - to the right side, it enters really the whole of the atrium, and so there is mixing of the blood that is coming back from the lung which isn't very much and the blue blood that is coming in from this side. And that is all discharged down here, some of it gets out to the arteries to the lung, most of it goes around the aorta, and what would be important in this baby's survival would be ways in which more blood could get to the lung as the principle and immediate problem, but the rest of the anatomy is very complex, and that obviously is a very serious situation.

I regret that we have one more area in the diagram which relates to this point here and perhaps I could deal with that now.

Q. Yes, please do.

A. And we will undertake to get that error changed.

Q. Thank you.

A. We were under the impression that a Blalock-Taussig shunt with gortex had been performed on this child to increase the blood supply



1
2 to the lung. Because this artery as in an abnormal
3 course like that instead of arching straight down
4 in the usual way if the vessel had not been attached
5 way down over here, is not a very good direct
6 angle to anastomosed to the pulmonary artery. There-
7 fore it is more usual to put a gortex connection
8 between the two. I think that we advised the
9 artist to do that and unfortunately we advised him
10 incorrectly. Because the surgeon did in fact tuck
11 this vessel directly into the pulmonary artery. So
12 this is an error, but the purpose of the operation
13 is exactly the same, it is just that the diagram
needs to be corrected for that point.

14 Q. The shunt was in fact
15 performed by bringing the two together?

16 A. Right, for putting the end
17 of this into there just as that gortex has been done,
18 just taking this and sewing it into this vessel.

19 Q. What then happened to the
blood supply to the left arm?

20 A. The blood supply to the left
21 arm is always changed as a result of the operation,
22 but because there are many vessels at the shoulder
23 that open up after that is done, the circulation to
the left arm is usually perfectly good.

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3 Q. Thank you. Doctor, again for
4 the purposes of summarizing and getting an overview
5 of this child's course, can we look at the discharge,
or death report on page 26 of the record.

6 A. Yes.

7 Q. The child was two days old
8 when he came to the Hospital for Sick Children and
9 had a congenital heart defect and the anatomical
10 anomalies that you have described. He had been seen
11 to be cyanotic shortly after birth and he had been
12 sent to the Hospital for investigation and thereby
13 catheterization these various defects were identified
14 were they, Doctor?

15 A. Yes.

16 Q. There was some chromosome
17 studies done because it was thought there might be
18 some chromosome defect I take it, not as a result
19 of this but other features of the child?

20 A. Other features, yes, suggested
21 that possibility.

22 Q. But in fact it was shown
23 there were not chromosome defects I gather?

24 A. That is correct.

25 Q. And having been admitted to
the Hospital on the 19th of November, a little over



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(Lamek)

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a month later the shunt you have described for us
was performed and it appeared to improve the
oxygenation of the blood, the murmur that was heard,
but there was concern that this shunt too might not
be adequate?

3

4

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6

A. Yes, there was some questions
about it.

7

8

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Q. And he too was being treated with heparin
in the hope that that would prevent occlusion of the
shunt by blood clotting.

10

A. Yes.

11

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Q. And your name appears on the
lower half of the page 26, Doctor, it is recorded
on the 26th of December, 1980, the PO₂ was 48:

"In agreement with Dr. Richard Rowe,
the child was transferred from the ICU
Ward to Ward 7G."

And we will come to that in a little while.

Can you just tell us for a moment
why that particular transfer was made at that time?

A. That was because I was a
little concerned about the baby going back to the
4th floor, because I thought it still needed some
sort of extra monitoring and care that would be best
provided in an intermediate type setting or Intensive
Care setting.



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Q. So 7G is what, the Neonatal
3 Unit?

4

5

A. That is the Neonatal floor,
yes.

6

7

8

9

Q. But two days later the
child did in fact come to Ward 4A, and I gather
as will appear from the chart there was a bit of a
squeeze of beds at that time?

10

A. Yes.

11

12

13

Q. There was collapse left
lung and it is noted the heparin infusion was
progressively weaned off. Does that mean the
administration of heparin was stopped?

14

15

16

A. Yes, it is usually only
continued for a specific number of days and then
it is stopped.

17

18

19

20

Q. The child goes back to Ward
4A on December the 28th, and five and a half hours
later in the evening sudden cardiac arrest,
resuscitation efforts and he cannot be revived, he
died.

21

A. Yes.

22

23

24

Q. Now, Doctor, can you tell
please what in your judgment are the significant
matters in this child's course and in the record

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which will assist in an understanding of his death
and the time and the manner of his dying?

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A. Yes. Initially the oxygen status of this baby, the amount of oxygen in the arterial blood was fairly good but while we were awaiting information about chromosomes and watching the baby it was obvious that the degree of pulmonary stenosis, or obstruction of pulmonary blood flow was increasing and that led to the decision for the shunt.



EMB. jc

1 1

2 But it was always difficult in this
3 baby to be absolutely sure that the state of
4 oxygenation was not being affected by other things
5 because there was a bilateral cleft palate, bilateral
6 harelip and cleft palate, and that is the situation
7 in a baby who is well of a lot of difficulty from
8 time to time that requires suction of mucus and ·
9 they can be quite difficult to manage. But if they
have heart disease as well, there is an extra concern.

10 There was evidence I think on the
11 26th of December.

12 Q. 26th of ... ?

13 A. There's a note in mine on page
14 58 that the baby had an abbreviated shunt murmur. That
15 means that the murmur was not entirely just systolic,
16 did go over into the other phase of the cardiac cycle,
but it was short. It wasn't a good going, roaring
17 ductal murmur and yet the baby's colour was good in
18 oxygen.

19 So, I was not too disturbed by that;
20 a little worried about what the abbreviated murmur
might mean.

21 That usually means if the baby looks
22 pink there may be a very big shunt.

23 Q. Yes.

24

25



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2 A. So, that may be one of the
3 concerns there might be that the shunt was larger than
4 we had anticipated.

5 I said there that I would be content,
6 and I am quoting, that the shunt is working, but
7 concerned about transfer, unless this can be arranged
8 through a monitoring intermediate intensive area
9 because of the respiratory problem and the risks
10 involved - and the risks, unquote. The main concern
11 would be that if you have a massive collapse of a
12 lung that's been shunted, then the shunt may be
13 obliterated.

14 I thought it would be helpful if we
15 could get a little further along in the postoperative
16 period before the baby came back to the regular ward.
17 That I believe was the reason for the transfer to
18 7G. Normally that doesn't happen and they are not
19 terribly willing to accept patients in that way
20 because they are so busy with new admissions all the
21 time that they have difficulty accommodating boarders,
22 as they might perhaps say.

23 But I think in that environment there
24 were no particular problems.

25 I think everybody was pleased with the
26 murmur and then because of the bed shortage, the baby



1.3

1

2 was transferred down to the Cardiac Ward. I don't
3 know where the evidence about the X-ray is, but
4 there was some collapse of the X-ray - some collapse
5 of the left lung evident on an X-ray, I think that
6 is on page 62, a note by the admitting physician.

7 Page 62, he is talking about no
8 acute distress and the colour was obviously good,
9 there was a liver edge that was a little bit down
10 and the respirations were a bit faster than you
11 would expect, so, there was some evidence there of
12 the possibility of early congestive heart failure,
13 although, not outstanding.

Q. Yes.

A. But there was on the chest
14 X-ray, the last but one line, "collapsed left lung".

Q. Yes.

A. So that clearly there was a
17 situation that was of the sort I was concerned about.
18 But I imagine everybody pitched in and did what could
19 be done and looked after things in the usual way.

THE COMMISSIONER: I'm sorry, what
20 was that, what happened?

THE WITNESS: I think everybody
22 pitched in to look after things in the usual way.

THE COMMISSIONER: Yes, but what was

24

25



1 . 4

1

2 the effect of the collapsed left lung? It did not
3 have the dire effect that you were fearing, did it?

4 THE WITNESS: Well, I think a
5 collapsed left lung jeopardizes the shunt or may
6 interfere with the function of the shunt because it
7 distorts the arrangement of the artery and the
connecting artery that's been anastomosed.

8 MR. LAMEK: Q. But on autopsy, Dr. Rowe,
9 did it not appear that the shunt was intact and open?

10 A. Oh, yes it did, yes. The events
11 subsequently proved that it wasn't the case that that
12 risk that I was concerned about had produced any
13 ill effect, but it would still be a prudent concern.

14 Q. It was a matter for concern
that it might?

15 A. Yes.

16 Q. In fact, it did not have the
result that you feared?

18 A. No.

19 Q. Yes.

20 A. As I read through the nurses'
notes, there was a moderate amount of mucus, the baby
21 was stable during the afternoon but then the apex
22 became irregular, the colour dusky and the respirations
increased about 80 at one point. Now, I don't know

24

25



1.5

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2 whether I can find that again.

3 Q. It should be around page 64,
4 Doctor, somewhere. Yes, on page 64, the note at the
5 top of the page.

6 A. " ... moderate amount of white
7 mucus. Colour remained pink. Apex
8 noted to be irregular, colour somewhat
9 dusky. Respirations increased to 80
10 and very shallow. Suctioned orally ... "

11 The suctioning issue occurs because
12 of the fact that this baby had a cleft palate. That's
13 the reason for all that. And then the events are as
14 described subsequently.

15 Q. Yes. Doctor, may I ask you
16 this. I don't mean to be facetious, but we have not
17 often seen in these charts, particularly in the
18 progress notes, notes by yourself. How did it come
19 about that you were involved in the management of
20 this child to the extent that apparently you were,
21 from the notes? There is one on page 58, another one
22 at page 55?

23 A. I have to do my turn on weekend
24 duty like everybody else.

25 Q. I see. These were weekends,
26 were they?



1.6

1||

2|| A. Yes.

3||

Q. Okay. Can we just fill in
4|| some of the spaces, Doctor?

5||

A. Yes.

6||

Q. I don't want to spend too long
7|| on this. The child was admitted, as we have said,
8|| on the 17th, and the next day there is a two-dimensional
9|| echocardiogram done, the day after that, the 19th,
10|| cardiac catheterization. That report, and I don't
11|| think you need to look at it, Doctor, but should you
12|| need to look at it I can give you the page reference;
but you have told us what it disclosed.

13||

A. Yes.

14||

Q. And it is not a concern now?

15||

A. No.

16||

Q. Page 38 of the record, this
page had initially been admitted to the Neonatal ICU,
had he not, 7G?

18||

A. Yes.

19||

Q. At the top of the page on the
23rd of November:

21||

"In view of stability of baby, baby
can be transferred to 7F."

22||

This is in that waiting period which
23|| extended for some considerable time until surgery could
24|| go ahead, is that correct?

25||



1.7

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A. Yes.

2

Q. But at that stage apparently

3

the baby was thought not to require the special
attention that it would have in the Neonatal Intensive
Care Unit. Is that fair?

4

5

A. That's right, this is a somewhat
less intense area.

6

7

Q. Yes. At the bottom of that
page, incidentally, again on the 23rd of November,
there is a notation that the child is cyanotic but
not in congestive heart failure?

8

9

A. Acyanotic.

10

11

Q. I'm sorry, acyanotic. It's not
turning blue and it is not in congestive heart failure?

12

13

A. Yes.

14

15

Q. I take it CHF was not a problem
with this child during its course in the Hospital?

16

17

A. Not before operation.

18

19

Q. Yes, not before operation.

A. No.

20

21

Q. But on the other hand when we
get to page 39, in the afternoon on November 23rd,
there is a note that the baby gets cyanotic when
crying and feeding?

22

23

A. Yes.

24

25



1

2 Q. Now, that's the 24th, vital
3 signs stable and that's the pattern that emerges
4 through 40, vital signs stable, needs suctioning
5 for large amounts of mucus and so on. Vomited on
6 the 24th, 5 to 10 cubic centimetres of, what's that,
7 fresh feed? No, each feed. But the pattern goes on,
8 "vital signs stable" on the 25th, 26th, colour good
and in no apparent distress.

9 And while this child is going on and
10 a chromosomal investigation is being carried out, he
11 seems to be moving along fairly evenly, does he not?

12 A. Yes, he had one or two little
13 odd things like the episode on the 26th, but nothing
14 that was of great concern.

15 Q. Yes. That's right, the question
16 of heart failure raised there too, the middle of
page 41 with respect to November 26th?

17 A. Yes.

18 Q. He had a spell of pallor. Do
19 you have that, sir?

20 THE COMMISSIONER: Yes.

21 THE WITNESS: Yes.

22 MR. LAMEK: Q. So, we go on through
the end of November and things are going along.
23 November 30th he is stable, again there is a bit of

24

25



1.9

1

2 vomiting but I take it nothing to be concerned about
3 particularly in those small incidents in the course
4 of this child?

5 A. Yes, including the skin
6 infection.

7 Q. Yes. We get to December 1 on
8 page 45 and it was observed that the child was
9 lethargic, scarcely waking up, and then at the bottom
10 of the page the note, on which I would like your
11 comment, Doctor, 3rd of December at 8 p.m., discussion
with Dr. Thomson.

12 Down at the bottom, having recorded
13 the PO₂ of 21:

14 "This PO₂ can't be doing his brain
15 much good, perhaps we should discuss
16 early shunt revision with cardiologists
17 rather than wait for further genetic
18 analysis. Will discuss in the
morning."

19

20

21

22

23

24

25



/DP/ak

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Was there a discussion about moving earlier on the cardiovascular surgery than had been planned at that time?

5

6

A. I think there was, yes. I think they asked me to come and have a look again.

7

8

9

10

Q. Could you help us, Doctor. Why was surgery being delayed here? I know there was a chromosomal investigation going on. What was the significance of that in terms of timing of surgery?

11

12

13

14

A. I think they wanted to be absolutely sure that this was not a chromosomal defect that might be of the type that would lead to inevitable death.

15

16

Q. Sorry, I don't understand that.

17

18

19

A. There are certain types of chromosomal abnormality, particularly there is a type which is lethal to young infants and is commonly associated with ---

20

21

Q. And what if it were of such a type?

22

23

24

A. Then the surgeons would not participate in an operation if the baby was going to die within the next few months.

25



1

2

THE COMMISSIONER: Sorry, I missed
that.

4

5

6

7

THE WITNESS: Surgeons would be
unlikely to participate in an operation for a child
who is inevitably going to die within a few months
from not ---

8

9

MR. LAMEK: Q. From something
entirely different?

10

A. From something entirely
different.

11

12

13

14

15

This is a very difficult and delicate
question, of course, in which the pediatrician
involved here was Dr. Saunders and he spent a great
of time with this matter, with the family, and
discussing with others.

16

17

Q. Was the surgery that was
eventually performed the same surgery that had been
proposed from the beginning?

18

19

20

21

22

23

24

25

A. The surgery that had been
proposed in the beginning, yes, was a probable shunt
at the appropriate time because at the time of the
original investigation, the baby's oxygen content
was really very good, because there was a lot of
good mixing and there was more blood going to the
lung. It was anticipated that that might change,



1

2

but the speed at which it changes is not really
predictable.

3

4 Q. And what is happening therefore
5 when we look at the note on page 45 of the record,
6 Doctor, is someone is saying, look, the PO₂ has
7 changed to an extent where if we wait for the
8 chromosomal investigation to be completed it may be
9 too late to do anything even if the right answer
comes out of that investigation.

10

A. That is a fair assumption.

11

Q. We may find there is no
12 chromosomal damage but by then this child may have
13 gone to the extent where a shunt is not going to
14 do him very much good. Is that essentially what is
being said?

15

A. Yes, I think in all fairness
16 that blood gas is measured at a very low oxygentension
17 would be something you would want to repeat before
18 you came to that conclusion, but it was a reasonable
19 concern, and they approached me about that.

20

Q. On page 46 there is a plastic
surgery note but again there is a comment referring
to cardiologists at the bottom of that note.

21

"In discussing with Dr. Freedom, the
immediate future of this child is

22

23

24

25



Rowe, dr.ex.
(Lamek)

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"somewhat up in the air."

3

4

Does that again refer to the question of waiting until the chromosomal investigation had been completed?

5

6

A. I think so. I assume so.

7

8

I am not absolutely sure. He may have been referring to something else, but that is what it sounds like to me.

9

10

11

12

Q. Was there any other respect in which, so far as you were aware, the immediate future of the child was somewhat up in the air as at early December?

13

14

A. It is conceivable he might have been referring to the long term prognosis but I cannot read that into that.

15

16

Q. Not when he says immediate future?

17

A. Yes.

18

19

Q. Then on December 4th, Doctor, there is a note by you.

20

21

A. Yes.

22

23

Q. On page 49, 4-12-80 headed "Cardiology" you are probably better at reading your handwriting than I am, Doctor. Will you read that for us, please.

24

25



Rowe, dr.ex.
(Lamek)

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A. I am disappointed. That looks
like the best handwriting on the page.

3

4

Q. It is terrific handwriting,
but I would not want to do violence to it. It says
"The signs suggest that..."

5

6

7

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A. "The signs suggest that
infundibular pulmonary stenosis may
have become more significant, that
is, tetralogy of Fallot like physiology.
In the event of progressive hypoxic
signs propanolol would be a reasonable
therapy on trial. A shunt is a likely
later need."

19

20

21

22

23

24

25

Q. Right. If I understand you
are right, you are saying if it gets to the point
where we have to intervene in some way before all
the information is available we can probably do it
initially medically although at some stage we may
have to intervene surgically.

A. That is right.

Q. Medically with propanolol.

A. Yes.

Q. That in response to the
suggestion I take it that maybe we had better get
on with the surgical intervention, saying okay,



1

2

cool it if you like, if it gets to that point we
can probably do something else medically before we
have to make the surgical decision.

3

4

A. Yes, that is a very accurate
description.

5

6

Q. As of that date it is recorded
in the note that the baby is not in heart failure.

7

8

"Cardiologists would prefer to wait
a few months before attempting shunt
operation - in fact they feel it
really is not appropriate at this stage."

9

10

11

12

13

14

That, I take it, was the kind of view
which lead you to say we can do some more medically
before we consider anything else.

15

A. Yes.

16

17

18

19

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Q. And with a few minor

episodes the course goes on until the time of
surgery except we start seeing notes such as that
on page 51, the bottom of 51, nursing note, which I
believe is the 6th or the 7th. Vital signs are
stable; tolerates feeds well, colour is mottled
in 50 per cent oxygen, skin cold and clammy. That
starts to appear as a regular report in the nursing
notes, does it not, Doctor?

A. Yes.

Rowe, dr.ex.
(Lamek)

J7

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Q. The next day, colour very

pale, in 50 per cent oxygen. Vital signs are stable. The next day but one, skin appears very pale, cold and clammy to the touch. Very prominent circumoral pallor. Colour mottled in 70 per cent oxygen. Vital signs stable.

8

9

What does all that indicate or suggest, Doctor, the coldness, clamminess, the colour?

10

11

12

13

14

A. Difficulties in maintaining

temperatures. That is not a good sign in a baby to have those features. If a baby's temperature goes off very much they can be quite prone to unexpected and sudden death. Hypothermia is a high risk situation for a small infant.

15

Q. What produces hypothermia?

16

17

18

19

A. Well, it may be the general

status of the baby; it may be something in terms of brain function. There may be a whole host of things that may do that. I imagine the neonatologists were addressing that question during that period.

20

21

22

23

24

Q. -Page 53, on the 15th of the

month, the nursing note reports the colour is gray, cool to the touch in 90 per cent oxygen, extremities are pale and cool, vital signs remain stable. The child appears more alert, tolerates

25



1

2

3 feeds well, no vomiting. The colour of the child
4 seems to get progressively worse as the amount of
5 oxygen in its environment is increased and the
6 increase of oxygen does not seem to help to reverse
7 that change in colour and coldness and loss of
temperature and so on.

8

A. No.

9

Q. Then we come to your note on
the 20th, on page 55. Can you help us with that one
please?

11

12

13

14

15

16

17

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A. "This baby is, after discussion
with Dr. Saunders and the family, to
undergo an aorta pulmonary shunt and
at present this is planned for
December 21st. I have spoken to
the parents about surgery as has
Dr. Freedom..."

to whom the patient was originally referred.

Q. Yes.

A. I think he actually saw the
baby in the out-patient department from the Toronto
General Hospital nursery prior to its admission the
next day and Dr. Saunders, who is the pediatrician
for the family and the baby, and the surgical represen-
tatives.



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Q. As of the time that decision was made that surgery would be proposed and, with the blessing of the parents, proceeded with, had the chromosomal investigation been completed?

A. I think there was a preliminary report which, and I am not sure whether Dr. Saunders had - I think it probably must have been finalized, but I'm not sure. I think there was a report on the 24th of November and a report on the 15th of December. I think the final report was the 15th of December so I guess it had been decided by that time.

Q. And did it not appear that there was the life threatening genetic condition?

A. No, this was a normal chromosomal complement.

Q. So that was no longer an obstacle to proceeding with the decision to surgery?

A. No.

Q. Why at this stage, Doctor, were you not proceeding in the way you had suggested initially in early December, medically, to deal with this situation?

A. I think the baby had been on propanolol.

24

25



J10

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Q. You had taken that step
already and now was the time to intervene surgically.

3

A. Yes, it did not seem to help.

4

Q. Surgery was the only play
left?

5

A. I think so.

6

Q. That was available, all right.

7

Now, the operative note in the
progress notes at least is dated December 23rd but
I understand in fact surgery was performed on the
22nd, was it not? The surgical note is ---

8

A. Yes, I have 23rd in my notes.

9

Q. The 23rd?

10

A. But you are right, it is
the 22nd - it is the 22nd on the operation sheet
and on the operative report, so I'm wrong.

11

Q. It was the 22nd, I believe.

12

A. Yes.

13

Q. And Dr. Williams' reporting
letter to Dr. Freedom although dated the 23rd refers to
surgery on the 22nd.

14

A. Yes, that is correct.

15

Q. Could we look at that for
a moment, please, page 8 of the record. He reports:

16

"I operated on this baby on December

17

18



1
2 "22nd to palliate his congenital heart
3 defect. ... There was also some
4 concern about the size of the right
5 ventricle, so that he may never be
6 suitable for total repair."

7 Was it contemplated that they might
8 be able to perform rather more drastic surgery to
9 repair the situation rather than to palliate it at
a later stage?

10 A. That would depend upon the
11 interpretation of the angiograms and things. I
12 am not quite sure whether, before all the other
13 information was gathered, whether we had that.

14 Q. That may be something that
15 I can ask Dr. Trusler about.

16 A. Dr. Trusler or Dr. Freedom.

17 Q. Or Dr. Williams in this case,
or Dr. Freedom, as you say.

18 A. Yes.

19 Q. At the bottom of page 1 of the
20 letter, Dr. Williams reports:

21 "Postoperatively he has been stable
22 and his saturation has been harbouring
23 about 70 per cent to 80 per cent."

24 The significance of that, please?



1

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A. That is not an unreasonable

value. I think one would hope to get saturation, meaning oxygen content of blood in the arteries, at around 80 per cent to 85 optimally.

6

7

Q. Was 70 per cent to 80 per cent an improvement over the pre-operative condition?

8

A. Yes.

9

Q. A significant improvement?

10

A. Yes, I think so. He would

11

have been I think I would judge about 40 to 50 per cent at the most.

12

13

14

Q. A substantial improvement although not quite as much as you would like to see, I take it?

15

A. Everybody wants the best.

16

Q. I am sure.

17

"His chest x-ray this morning shows definite increased vascularity on the left but we are still watching him as to whether his shunt is sufficiently large. I think that if there is much further question about it we should probably re-operate on him and do a central shunt."

18

19

20

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Is there any concern other than that



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3

expressed by Dr. Williams as to the adequacy of
the shunt that had been performed on this child?

4

A. I do not recall.

5

Q. You don't recall?

6

A. No.

7

8

9

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DM.jc
K

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2 Q. You don't recall?

3 A. No.

4 Q. And you as I recall it, your
5 evidence a few minutes ago, are reasonably satisfied
6 that the shunt was working satisfactorily, that was
7 your earlier note, I think, wasn't it?

8 A. I would have to look back.

9 Q. Because you had a drawing about
10 it, did you not, right in the progress note, and I
think you said:

11 "I was satisfied that the shunt is
12 operating properly ..."
13 something of that sort?

14 A. Oh, before the transfer back?

15 Q. Yes, at the time of the
transfer?

16 A. Yes, on the 26th.

17 Q. Yes, on the 26th.

18 A. Yes, the murmur was a little
19 strange but the oxygen tension was good.

20 Q. So the baby is to be heparinized
21 postoperatively and he goes to the ICU it would appear
from page 56 of the record.

22 A. Page 57, it sounds like a miserable
23 way to spend Christmas Day, but that was December the

24

25



K.2

1

2 25th. The child is reported as: "stable,
3 spontaneous breathing ... ", is that?

4 A. Breathing.

5 Q. I can't quite see the note, page
6 57.

7 A. Breathing. I think that is what
8 that is, "spontaneous breathing".

9 Q. "Being heparinized and can be
10 extubated tomorrow."

11 Okay. Postoperatively does not seem to be doing badly
12 at that stage at least, Doctor, is that fair?

13 A. Yes.

14 Q. Page 58 we have your note about
15 the shunt, the one we were just looking for:

16 "Content the shunt is working but
17 concerned about transfer unless this
18 can be arranged to a monitoring
19 intermediate intensive area because
20 of the respiratory problem and risks."

21 And somehow you were able to prevail upon the people
22 in 7G to take this child, I take it?

23 A. Yes, an unusual accomplishment.

24 Q. And we unhappily when we get to
25 page 60, the note at the bottom, December the 27th,
26 although in fact he did not move until the 28th, I

27



F.3

1

2 understand. The note at the bottom is:

3 "Baby transferred from ICU because
4 of bed shortage."

5 I am sorry, is that a transfer to 7G
6 or from 7G because of bed shortage? I must say until
7 now I read it as being the reason for the transfer
from 7G to the ward, but it is of course ambiguous:

8 "Baby transferred from ICU because
9 of bed shortage."

10 suggests that was the reason for the transfer to 7G,
11 doesn't it?

12 A. I don't know, it could mean
13 that, I suppose.

14 Q. Would somebody on 7G refer to
15 his own ward, or her own ward as the ICU?

16 A. No, it wouldn't be usual.

17 Q. No, I wouldn't have thought so.

18 A. It could be that the ICU was
19 short of beds and that both situations were satisfied
20 that the baby had to be transferred out of the ICU
and the options were the fourth floor.

21 Q. Either the fourth floor or the
Neonatal, I take it?

22 A. Yes.

23 Q. And you were able to find him a
place in the Neonatal, I presume?

25



1

2 A. Not for very long but at least
3 for a short time.

4 Q. Were you content that he be
5 transferred out of there on the 28th?

6 A. I don't believe we had much
7 choice on that issue. I think when beds get tight
8 and there has to be a priority assessment taken and I
9 think we have to go along with that and I believe
that was the reason.

10 Q. Doctor, when he went to the
11 fourth floor on the 28th, was any enhanced level of
12 nursing care ordered for him?

13 A. I am not sure.

14 Q. Do you recall whether you were
15 involved in any decision about the level of care that
he should receive?

16 A. No, I am not sure, I can't
17 recall.

18 Q. I do not see anything in the
19 chart that suggests that such an order was made when
20 he went to the fourth floor?

21 A. No.

22 Q. But that may or may not be the
23 determinate of the question. When he goes to the
24 fourth floor, at page 61, he is received from 7G, his

25



1

2 colour, a note at the foot of the page:

3 "Colour slightly cyanosed but pink
4 in oxygen. Turns darker purple
5 when crying. Chest air entry reduced
6 to left lobes - noisy throughout."

7 So there is still something of a respiratory problem,
8 continuing respiratory problem with this child, is
there not?

9 A. Yes.

10 Q. December the 28th, page 64, and
11 we stop there because once again the nursing note
12 seems to follow the - no, in this case it precedes
13 the arrest note, from 1 o'clock in the afternoon
14 until 7 o'clock in the evening of the 28th. Nurse
15 Reaper reports:

16 "Stable during the afternoon. Apex
17 134-170 and regular. Tube fed, D/
18 tube fed at 2 o'clock and retained.
19 Suctioned for moderate amount of white
mucus. Colour remained pink."

20 And then at 6:30:

21 "Apex noted to be irregular, colour
22 somewhat dusky. Respirations went
23 up to 80 and very shallow. D/tube
24 feeding in progress, position checked
twice."

25



1

2 Was it thought that the tube may be so placed that
3 it was causing some distress or some discomfort
4 perhaps?

5 A. Perhaps.

6 Q. "Suctioned orally for moderate
7 amount white mucus. Colour extremely
8 poor. Doctor notified and present.
9 Apex dropped and cardiac arrest
called."

10 So from a pattern apparently during
11 the afternoon of stability and pinkness and regularity
12 in the vital signs, at 6:30 the irregularities start
13 and the colour changes and so on. The end of that
14 sequence of events, the heart rate slows and an
arrest is called.

15 Now again, we have a very illegible
16 thing, but Doctor, I can help you because I have
17 compared this with the original, the note at the
beginning of 7:30 reads as follows:

19 "Arrived to find Cardiology Fellow
20 and Resident in attendance. Baby
blue, pale, no pulse ... "

21 Indeed I can do better than that, Doctor, I will give
22 you a copy of that to look at because there are a
23 couple of words I can't read and maybe you can.

24

25



1

2 I think I have it right, Doctor, and maybe you can
3 fill in the words I am missing:

4 "Baby blue, pale, no pulse, inter-
5 mittent normal complexes and
6 irregularities suggestive of multi-
7 focal ventric ectopics ... ", is
that?

8 A. Yes.

9 Q. As we go along we can do that.
10 Is he saying that from time to time there will be
11 a normal rhythmic heartbeat but then irregularities?
12 A regular beat and irregular beat interspersed?

13 A. He is - there is no pulse, so
he is looking at the electrocardiogram.

14 Q. Right.

15 A. So what he is seeing is
16 apparently the usual complexes of the electrocardiogram
17 and occasional ectopic beats.

18 Q. Those are beats off the rhythm,
19 are they?

20 A. Yes.

21 Q. And he thinks they are
ventricular?

22 A. Yes.

23 Q. So the baby is being bagged:

24

25



K.E.

1

2 "Bagged with 100 per cent oxygen,
3 fading pulse -- "?

4 A. Gasping.

5 Q. "Gasping", I am sorry, I
6 couldn't read that one.

7 "Gasping. Pupils okay, effective
8 CPR, new IV butterfly."

9 What does butterfly signify?

10 A. That is a type of intravenous
11 needle.

12 Q. Okay. Then he records:

13 "10 cc's of sodium bicarbonate given.
14 Small dose of adrenalin produces more
15 frequent normal complexes. Atropine
16 is given, 2 milligrams. Tubed early
17 by Dr. Burns ... ",
18 is that?

19 A. Yes.

20 Q. And:

21 "Good air entry. Further small
22 doses of adrenalin, bradycardia sinus
23 persisted with intermittent irregular
24 ventricular activity ... "?

25 A. "Persistent".

Q. "Persistent", is it?



1

2 A. Yes.

3 Q. "Bradycardia sinus persistent ..".

4 A. "Persisted".

5 Q. "Persisted" is it, I am sorry:

6 "With intermittent ventricular
7 activity."

8 A. Yes.

9 Q. "Isuprel bicarb led to some
10 improvement but no output felt."

11 He was seeing something on the ECG but he wasn't feeling
12 a pulse, is that what is happening?

13 A. Yes, when he stopped doing,
14 briefly stopped the compression I presume it was going
15 on.

16 Q. Then he talks of the admini-
17 stration of a couple of things and I can't read this
18 line, Doctor, can you help me?

19 A. That is "calcium glutamate".

20 Q. Yes, "1.5 cc"?

21 A. Yes, 1.5 cc.

22 Q. "No plus .." something effect?

23 A. "No positive inotropic effect".

24 Q. "Inotropic", what does that mean?

25 A. That just means contraction.

Q. Then: "narrow ventricular ... ",
and I can't read the next word.



1

2

A. "Going to ventricular instability plus, plus ... ", which means he was getting a lot of ectopic beat.

Q. "0.5 dose of xylocane 21 ... "?

A. 2 per cent.

Q. Is that 2 per cent?

A. Yes.

Q. "Reduced ventricular activity and bradycardia persisted. More atropine bicarb seemed to produce good sinus rhythm with no ventricular activity. Rate of 70 to 80 but no increase in the output."

Is there a word there, I don't seem to be able to read it:

15

"Rate of 70 to 80 ... "?

16

A. "Calcium caused no increased output."

18

Q. "Caused no increased output."?

19

A. I think that is what that is.

20

Q. "Good IV inserted, good volume...

21

infusing",

and I can't read that word?

A. "Crystalloid".

22

Q. "Crystalloid", thank you. It

23

goes on:

24

25



K.11

1

2 "Bradycardia with further ventricular
3 ectopics returned. Resistant to
4 Isuprel and atripine. Adrenalin
5 produced some increased or improved
6 heart rate."

7

A. Yes.

8

Q. "But no output felt. Sodium
bicarb of no value ... "?

9

A. "Calcium", I think.

10

Q. Is it calcium, I am sorry.

11

A. "Calcium of no value. Gradual
12 decline in rate of normal complexes
with increased ventricular ectopics.
13 Shock after bicarb adrenalin no
14 response. Further deteriorating
15 bradycardia ... ",

16

and a word I cannot read:

17

"ventricular fibrillation"?

18

A. I don't know what that word is
19 that you are having trouble with.

20

Q. Nevertheless, the pattern of
arrhythmias succeeding each other is pretty clear,
21 isn't it?

22

A. Yes, it is.

23

Q. "No response to shock post-
adrenalin up to 10 ... ",

24

25



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1

2 and I am not sure what the unit is?

3 A. Joules.

4 Q. Joules, thank you.

5 "No response to intracardiac
6 adrenalin either."?

7 A. No.

8 Q. "After 45 minutes when pupils
9 fixed and dilated 15-20 minutes arrest
10 gets continued. No ... output ever
since beginning."?

11 A. "No spontaneous output."

12 Q. "No spontaneous output ever since
beginning."

13 Doctor, when you considered the death
14 of the Belanger baby, what did you ascribe as the
15 cause of the death?

16 A. I thought that was due to the
17 complex heart disease in a baby who had had what
18 appeared to be a reasonably good shunt but you had
19 other problems that may have produced hypoxic issues
20 for the baby, particularly the atelectasis and the
21 general status of the baby in that regard seemed to
me to be compatible with the picture of arrest.

22

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Q. Well, Doctor, I am certainly not going to be so presumptuous as to challenge your opinion on that, but can you explain one thing for me. Do I understand you to be saying that the problems in the left lung, the collapse in the left lung, could mean that although blood was getting to the lung because of the shunt, the collapse in that lung meant that the blood, having got there, wasn't sufficiently oxygenated anyway?

10

A. That could be a factor.

11

Q. All right.

12

A. That could be happening.

13

Q. So, it was getting there but the lung was in such a state as not to provide it with a degree of saturation of oxygen that was needed?

15

A. Yes.

16

Q. But we do know that the oxygen saturation had been recorded shortly before the child's death, after surgery, a few days, three or four days before death, and hovering between 70 and 80 per cent?

20

A. Yes.

21

Q. Which is a very substantial improvement, as you have told us, over what it had been before?

24

25



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L2

2 A. Yes.

3 Q. So, there was a shunt that
4 was open and working?

5 A. Yes.

6 Q. And there had been a
7 significant increase in the oxygenation of the blood.

8 What then was causing these other
9 conditions that you think may have brought about the
death?

10 A. Well, I think there are
11 a number of things that can be involved in the other
12 conditions aspect of it. I think one of the important
13 ones is that that sort of baby is always at threat of
14 further pulmonary disturbance which may tip the
15 balance. The other is that there was a record in
16 this baby of having temperature control difficulties,
17 and that's the sort of thing I mean. The general
18 status of this baby may be such as to militate in a
number of different directions to just tip the balance.

19 One of the questions that we
20 weren't sure about was whether this shunt - I remember
21 Dr. Williams thought it was maybe not big enough, but
22 there were some questions about it being a bit too
large.

23 The respirations had increased in
24
25



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L3 2 the latter part of the observations, and I suppose
3 one of the questions that came up, would have come up
4 in the management issue, was whether that might not
5 represent some heart failure, and I think there is
6 some support for that view by the post mortem evidence.

7 Q. Certainly, the heart was not
8 found to be enlarged at post mortem.

9 A. There were, however,
10 bilateral pleural profusions and ascites. There were
11 even other things perhaps that might add to the total
12 picture. I am not suggesting any one of these things
13 may have been totally responsible, but I think there
14 was a question of a Di George Syndrome here.

15 Q. Yes.

16 It says:

17 "The finding of a hypoplastic thymus
18 and hypoplastic pair of thyroid
19 glands along with an aortic anomaly
20 is typical of partial Di George
21 Syndrome."

22 A. And that condition has been
23 known to be associated with sudden death.

24 So, there were a number of things
25 in this baby's condition that suggested the explanation
26 could be advanced to explain that death.



1

L4 2 Q. Again, I take it, Doctor,
3 that one other cause of death with which the terminal
4 symptoms would be equally consistent would be digoxin
5 intoxication?

6

A. Yes.

7

Q. Now, this child was not
receiving digoxin. Digoxin had not been prescribed or
8 added?

9

A. No.

10

Q. Doctor, we have gone through
11 approximately 20 deaths in the course of the last
few days, and you have been patient with me, but in
12 the latter half of 1980, is it not fair to say that
13 a number of people involved in the Cardiology wards
14 at one time or another raised the question that one
15 or another of these deaths may have resulted from, or
16 may have exhibited signs of digoxin intoxication.

17

Have we not seen that in the course
of the review of the deaths that we have looked at?

19

A. That has been raised, yes.

20

Q. But at least raised the
possibility of digoxin toxicity --

21

A. Yes.

22

Q. -- in the course of those
six months?

24

25



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L5

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A. Yes.

3

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Q. But if I understand you, Doctor, when you, at the end of those six months, in preparing for the meeting of January 12, 1981, went back and looked at those deaths and discussed them, and I take it tried to understand why and how those deaths had occurred?

8

A. Yes.

9

Q. As I understand you, it simply did not occur to you that any of those children might have died because of digoxin poisoning? Do I have your then position clearly in my mind?

12

A. Yes, I think that is correct.

14

Q. Now, you said last week that in considering those 20 or so deaths for the January 1981 meeting, you considered the possibility that some mismanagement of the patients may have contributed to the high level of ward deaths but, as I recall it, you said that was a possibility that was so remote that you didn't seriously consider it. Is that fairly what you said and what you did at the time?

21

A. Yes.

22

Q. Now, in thinking of even the remote possibility of mismanagement, what did you

24

25



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L6 2 mean by mismanagement? What does that term encompass?

3 A. Well, we just wondered
4 whether actions might have been taken. We were
5 particularly concerned about the patients who hadn't
6 yet got to surgery and those who had come back from
7 surgery as to whether we might have handled the matter
8 differently. I don't think we were ever in the
9 position of saying that there was clear evidence of
10 any major mismanagement, disagreement or anything like
11 that. But I think we wanted to look at those
12 patients, and we had a very specific objective to
13 see whether or not anything that we might have done
14 might have helped.

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Rowe, dr.ex.
(Lamek)

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BB/ak

Q. Well, I'm grateful to you for defining management for me, Dr. Rowe, because it may have a more restrictive meaning than perhaps I would attribute to it. But as I understand it, you are saying did we really plot the course of these children properly or was there something that we were not addressing our minds to. Were we timing the surgery right, were we taking a rational conservative view of things, were we perhaps thinking quickly enough of re-operation. That kind of management decision in other words?

A. Yes.

Q. And the question of mismanagement did not get down then I take it to the day to day maintenance and handling and dealing with the patients in their sort of moment to moment needs and wants and so on?

A. No.

Q. Did the possibility of some breakdown at that level occur to you?

A. That didn't occur to me because I get reported to by the staff cardiologists. They are all senior people, they are all capable of making judgments on that score and I expect that they would, if they had any concerns about minutia



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that might not have become evident on broad strokes
of the review.

3

4

Q. Yes. Now, in the early part
of January, 1981, you were looking back over a
six month period in which there had been, as you
say some 20 deaths, and the very number was the
cause for the exercise, was it not?

5

6

A. Yes.

7

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Q. The exercise is being
carried on because that was an unusually high number?

11

A. Yes.

12

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Q. And in looking back over
those deaths, did it come to your attention, did you
recall that in the case of David Taylor the possi-
bility of digoxin toxicity had been discussed at
the very first Mortaility and Morbidity Review
meetings in September. Did you recall that?

A. No, I didn't recall that.

Q. Did you observe in Brian Gage's
chart that on the last day of his life he had a
level of digoxin in his blood of 3.5 nanograms per
millilitre; not grossly elevated but elevated to the
point that you would regard as a warning signal.
Did you observe that in reviewing these deaths in
preparation for the meeting?



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2L3

A. I think that we had dealt

with that matter or that matter had been dealt with
at the time of the morning conferences.

Q. Doctor, it may have, but what
I am suggesting to you is that the morning conferences
deal with deaths one at a time?

A. Yes.

Q. In January, you were looking
at deaths 20 at a time?

A. Yes.

Q. And if enough straws blow in
the wind, and I'm not suggesting that they did,
but if enough blow in the wind, looking at them
20 at a time you may see a different perspective
than when you look at them one at a time, may you
not?

A. It's true.

Q. Yes. So, although that may
well have been a matter for discussion at the daily
meeting on the ward at the time Brian Gage died,
was it something that came to your mind when
reviewing the whole series of deaths?

A. I think in the patients who
were under intensive therapy for severe disease,
we don't consider levels of the sort that we



Rowe, dr.ex.
(Lamek)

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discussed in those individual patients as being the likely explanation for death. I think that's the position we would adopt. We would not consider that as a major issue because it's a very common one and we would say that's within the grounds of therapeutic use of the drug and of not major concern because we have seen a lot of babies with this condition.

Q. Oh, I know you have.

A. And we don't get as uptight about a digoxin level as other people seem to do, including some of the residents.

Q. Well, Doctor, I want to come back to that answer, but is the answer to the question that I asked you, no, you did not have that incident in the Gage file present in your mind at the time you did this review in January, 1981?

A. I don't think that we had a list and struck that off the list, I think we just remembered the situation and said this baby had severe congestive failure and was treated appropriately and we didn't think that there was anything of note in that record.

Q. Now, Doctor, I hear what you are saying and, believe me, I think I understand it,



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2

L5 that you see a lot of babies, you see a lot of
3 very sick babies, you see a lot of babies where
4 tough minded treatment is necessary, I understand
5 that.

6

A. Yes.

7

Q. And you see a lot of deaths.

8

But now you are looking at a case where there had
been 20 deaths on your ward in six months.

9

A. Yes.

10

Q. And that is not a usual
11 situation, is it?

12

A. No, it isn't.

13

Q. Was it present to your mind
14 in the early part of January, 1981 that Richard
15 McKeil on the last day of his life had a level of
16 digoxin in his blood which was not known but was at
least known to be greater than 4.7 nanograms?

17

A. Yes. Well, we know of course
18 that he had a level of almost that beforehand.

19

Q. Well, he had had 3 point
20 something before and he had a 4.6, but this was the
21 day he died. Was that present in your mind?

22

A. Well, I think we just included
23 all that in our thinking. I can't remember the
24 exact process I went through in January to review

25

every death but I can tell you that we would have included all that information in looking at it. I can only say again that if we have digoxin levels that are mildly elevated like that, we are not going to get unduly upset.

Q. With respect, Doctor, you don't know how mildly elevated Richard McKeil's digoxin level was, do you?

A. No, we don't know for sure.

Q. You don't know. It may have been grossly elevated for all that you knew?

A. Well, I don't know.

Q. You don't know.

A. I only knew it was more than 4 point something.

Q. That is right, and how much more you did not know?

A. No.

Q. And, therefore, to regard that as a mildly elevated digoxin level is, with respect, to reach a conclusion for which the factual basis is not present, isn't it?

A. Not entirely because I believe that his level of 4.6 before that was what most people would regard as terribly high and he had no



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toxic effects at that time.

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Q. You're not telling me that
this is nearly .1 of a nanogram more than that, it
could be 10 nanograms?

5

6

A. I don't know what it was.

7

8

Q. It was more than 4.7?

9

A. I don't know what the level
would have been.

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/DP/ak

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Q. And indeed the others of which stated in the chart may be merely symptoms themselves of digoxin toxicity, as we said yesterday.

5

A. Yes.

6

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10

Q. Doctor, does it not appear that during the latter half of 1980 a number of people involved in the cardiology wards contemplated that one time or another that one or more of these deaths may have had some digoxin toxicity involvement?

11

A. Yes.

12

13

14

Q. And when you were putting them altogether for the purpose of preparing for the meeting of January 12th, 1981 that possibility either did not occur to you or was rejected by you, I take it?

15

A. Yes.

16

Q. Which one was it?

17

A. I think rejected, probably.

18

19

20

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24

25

Q. Going back to the question of possibility of mismanagement, Doctor, I do not suggest for a moment that in January of 1981 you would or should entertain the abhorrent thought that somebody might be deliberately administering improperly drugs to your patients, I would not suggest that to you. But did you not consider the possibility that errors may have been made either in the



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calculation or in the administration of drugs,
digoxin or anything else, and that that may have
in some way been contributing to the level of deaths
that you had been seeing and about which you were
concerned?

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A. The way that we dealt with
that issue is that the cardiologist's job on the
floor is to check the amount of digoxin that is
ordered and to make sure that the doses are being
given, through nursing, and that is a function of
a cardiologist when they are reviewing a death.
So I would have expected, if there had been concern
from cardiologists in the process of these deaths
about the matter of the administration of digoxin,
they would have raised it. Of course they would
not be able to anticipate sinister issues.

Q. Of course not.

A. But in the ordinary course
of events that is the function of the cardiologist.

Q. Doctor, in the best devised
and run systems, errors can occur and indeed I put
it to you errors can occur in clusters, can they not?

A. I expect so, I don't know.

Q. Perhaps when we come back
next week I will put something to you, but do you



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not recall that in the late summer of 1980 there was a cluster of four or five errors in digoxin administration on the cardiology wards?

5

A. Yes, but not major errors.

6

Q. Whether they were major or not, errors can occur?

7

A. Oh, yes.

8

Q. No system is immune from them?

9

A. No.

10

Q. Doctor, I understand, and I sympathize with the puzzlement there must have been about this whole situation, next week we will be talking about the balance of the deaths and the reviews that you made of those and such reconsideration as you may have given to some of these earlier deaths. Could you just tell us now so that we might understand, Doctor, when you next conducted a review of the cardiology ward deaths?

11

A. We did not have the review until the end of March.

12

Q. Until the end of March?

13

A. Yes. We did not have an official review.

14

Q. You would have the daily

15

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cardiology meetings of course?

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A. Yes, and the pathology people had theirs and the surgical people had theirs.

5

6

Q. But at the end of March there was a review that was designed to look at this block of deaths that had occurred and ---

7

8

A. We did not have an official divisional review. That was when the events broke in March; there was a need to obviously review everything.

9

10

Q. That was, I take it, after March 22nd or March 25th?

11

12

A. Yes, that is right.

13

14

Q. Did you at any later stage review either the 1981, the first quarter of 1981 ward deaths and/or the second half of 1980 deaths? Did you at a later stage go back and look at the whole sweep of these things?

15

16

17

A. Yes, we had done that.

18

19

Q. When did you do that?

20

21

A. We have done that within the division. I'm not sure of the exact time but it was subsequent to that period.

22

23

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Q. Maybe what we can do next week, Doctor, is look at the assessments that you made of the January, February, March deaths and

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any subsequent review that you made, and your
present view of all of those deaths in the long
sweep?

5

A. Yes.

6

MR. LAMEK: Thank you very much.

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THE COMMISSIONER: Thank you,

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Doctor. Mr. Lamek, have we any more of the ---

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MR. LAMEK: Oh, could I just ask
you to stay for a moment, Doctor - precisely that.
I had them brought over so that counsel may pick up
copies of the further charts either tomorrow or
Monday.

13

14

I am going to ask you, Doctor, to
do that identification for me if you would.

15

16

17

Then, Mr. Commissioner, if I may,
we have to resolve definitively what is happening
about sitting next week, if that is all ---

18

19

THE COMMISSIONER: I thought you
had bullied me into starting on Tuesday.

20

21

22

MR. LAMEK: I could not believe I
had been so successful with just one short submission.
Starting on Tuesday, that is terrific. Thank you,
sir.

23

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THE COMMISSIONER: All right.

MR. LAMEK: Q. Dr. Rowe, I'm



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3 showing you what I think to be a copy of the
4 Hospital's record for Janice Estrella, and ask you
5 if you recognize that, please?

6

A. That is the record of Janice
Estrella.

7

MR. LAMEK: Thank you.

8

THE COMMISSIONER: Exhibit 91.

9

---EXHIBIT NO. 91: Medical records of Janice
Estrella.

10

11

MR. LAMEK: Q. Next, Dr. Rowe, a
copy of the medical records of Baby Fazio.

12

13

A. That is the record of Frank
Fazio.

14

MR. LAMEK: Thank you.

15

THE COMMISSIONER: Exhibit 92.

16

17

---EXHIBIT NO. 92: Medical records of Frank
Fazio.

18

19

MR. LAMEK: Q. And next, the chart
of Bruce Floryn.

20

21

A. That is the chart of Bruce
Floryn.

22

MR. LAMEK: Thank you.

23

THE COMMISSIONER: Exhibit 93.

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---EXHIBIT NO. 93: Medical Records of Bruce
Floryn.

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5

MR. LAMEK: Q. And last, for the
moment, a copy of the chart of Jennifer Thomas.

6

7

A. This is a copy of the chart
of Jennifer Thomas.

8

MR. LAMEK: Thank you, sir.

9

THE COMMISSIONER: Exhibit 94.

10

---EXHIBIT NO. 94: Medical Records of Jennifer
Thomas.

11

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THE COMMISSIONER: I take it the
rest are not available?

13

14

MR. LAMEK: Just the volume of
them was too much for today.

15

THE COMMISSIONER: All right.

16

17

MR. LAMEK: And Mr. Commissioner,
copies of those charts will be available at
counsel for the Commission's Offices and may be
picked up tomorrow or Monday in preparation for
the resumption of Dr. Rowe's evidence on Tuesday.

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THE COMMISSIONER: Yes. I do not
think it is really your task, but some of these -
if I can use the terrible word, paginations - are
done extremely well but some of them are not done
at all.

25



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3 MR. LAMEK: I know, Mr. Commissioner,
4 it is a problem. Unhappily, the larger the task,
the more difficult the quality control.

5

6 THE COMMISSIONER: Whoever is over-
looking our student labour can take that up with them.
7 Nothing else then, I take it?

8

9 MR. LAMEK: Not for me,
10

Mr. Commissioner, thank you.

11

THE COMMISSIONER: Tuesday at

12

10 o'clock.

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MR. LAMEK: Thank you, Doctor.

14

15 ---Whereupon the hearing adjourned at 1:00 p.m.
16 until Tuesday, July 26th, 1983 at 10:00 a.m.

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